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THE JOURNAL OF THE ASSOCIATION OF CINE-TECHNICIANS

number ONE

THE JOURNAL OF THE ASSOCIATION OF CINE-TECHNICIANS

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The Journal of The Association of Cine-Technicians.

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Editorial

A new Journal is born. We make no apologies and offer few explanations. We feel that the *Journal of the Association of Cine-Technicians* will offer a link between film technicians, provide an outlet for their views, help them in their work and through them benefit the Film Industry generally. Views expressed will be both critical and constructive, each contributor will be specially qualified in his particular line and whether we agree or not with his point of view there should be much to learn. The first list of contributors represents men whose opinions will be valued and whose remarks will be noted. Let us learn from them and so help the industry whose future we all have at heart.

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We welcome the co-operation which exists between Studio Executives and the Association. They feel that such an organisation can benefit the Industry. We have its future at heart and if there should be differences, are determined they shall be friendly ones. Some technicians are dubious of joining the Association because of the rights of collective organisations to withhold their labour. We have no desire to strike either now or in the future. Reasonableness on both sides will prevent that necessity ever arising. On our part we are determined never to lose that friendly spirit at present so prominent and so pleasing. We are sure Studio Executives echo similar feelings.

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We appreciate the presence in a British Studio of a technician from abroad from whom we can learn and the Industry benefit. But we do appeal to Studios to remember that many competent British technicians are at present without employment. Films cannot be called a British Industry if the sole qualification to that claim is based on the fact that the studio is located on British soil. Let us not lose our sense of proportion and think that because a technician comes from abroad he must necessarily be first-class. We must train our own countrymen to be experts, as they are in so many industries, and when they have had that training, give them a chance to prove their worth.

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Apprentices have found their way into the Film Industry as elsewhere. We welcome the move provided it is not used as a means to exploit cheap labour. Apprentices should not do the work of a qualified technician; the inflow to the industry should be regulated and in the interests of all "premiums" should be abolished. We would welcome the foundation of scholarships by companies, educational bodies and training centres. Wealthy parents should not be a necessary qualification for entry to the industry nor lack of them a deterrent.

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All our members will be pleased to know that Sir Reginald Mitchell Banks, K.C., has recovered his health after his recent illness. It was with deep regret that A.C.T. received his resignation from the post of First President on his being appointed to a Judgeship at Hull. He still remains a Patron and we all remember and appreciate his wonderful leadership which laid the sound foundations of A.C.T.'s present success.

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We should like to place on record our appreciation of the striking and effective cover design of this Journal and acknowledge our thanks to the designer for such an excellent piece of work. The nature of the Journal is clearly epitomised and if, true to precedent, the cover sells the goods we feel that our battle is more than half won.

News-Reel Topics "Ex-Ray"

"The News-Reel War"

Production Costs Mounting

Two thousand pounds for the exclusive film rights—an appeal to the public to take sides—two hundred and fifty thugs for protection — fights — fireworks — balloons —bullies—spies—and all the dirt and filth that goes with war. An unscrupulous crowd of hangers-on, battening on the perks to be obtained from to-day's conditions, costs mounting to gratify someone's whim which really doesn't mean a thing to the showman or his public, and what should be an honoured profession, steadily being dragged down to become a public nuisance. These are the conditions existing to-day in the News-Reel War.

When we look into the situation from a technician's point of view, we find that conditions of employment, salaries, allowances and expenses have been drastically cut to allow for the wild spending that exclusive rights entail.

Equipment has only been replaced where the existing contracts for sound gear have ended, permanent staffs are maintained at a minimum, extra hands being recruited from the unemployed.

These unfortunate technicians are not able to maintain themselves in a state that the industry justifies owing to the irregularity of their employment. They have been used to keep down the conditions of employment of the regular staffs.

In covering general news events limited crews are despatched with the result that new ideas cannot be tried or experimented with.

We find that the Executives do not try to improve their reels by competing for the best technical brains in the industry, but rely entirely on the power of money to stifle their rivals' competition by excluding their cameramen from national events.

With the use of modern hand cameras they should realise this is impossible.

We find news-reel policies and organisations to-day under the control of men who, in fact, are not news-reel men. To my knowledge, in only two cases have qualified news-reel men got executive positions and one of these is burdened by non-technical control.

The success of our newspapers has been founded, not by the purchase of exclusive rights, the cutting of telegraph lines, the jamming of wireless, or the beating up of rival reporters, but by securing the best journalistic brains and controlling them by a policy devised by an Executive who have spent years in learning every phase of newspaper production.

I have just read an article which describes the alleged warfare between rival news-reel cameramen. What a false statement this is. News-reel cameramen have to meet each other year in and year out. They are technicians; men whose knowledge makes them respect the good work of a rival while they each devote their lives, comfort and even their health to the loyal service of their respective companies. These men have no war with each other. In fact, there is a brotherhood existing between them that cannot be broken by the present commercial hooliganism.

There is room for all the existing reels on the cinema screens of this country and that position will continue to exist even if one reel purchase the rights of everything.

Owing to many unfortunate happenings in connection with this news-reel war, some of the leading authorities make their events open to all reels who like to film, asking them to share the costs of lighting, etc.

The time is ripe for the closing of this stupid war before someone is seriously hurt. No deaths have yet occurred, but at the Grand National this year extreme danger to cameramen and spectators was only averted by quick action on the part of the "pirates."

The coverage by all reels of national events does not mean the stifling of competition and the reel that uses intelligence combined with an expert staff will always hold the premier position on the screen.

A word to you, friend Showman. The colossal prices paid for these rights and their attempted protection can only be found by cutting the quality and costs of these reels during the rest of the year.

News-reel representatives should receive the same facilities as their newspaper brethren, only being asked to pay for special stands or seats where required.

The money that is wasted on these rights should be devoted to improving equipment, enlarging permanent staffs and a better coverage of subjects. After this has been done I am sure there would be more than a little over for the investor.

As we go to Press the news filters through that representatives of the five News-Reel Companies have met under the chairmanship of the Cinematograph Exhibitors' Association for Peace talks.

This meeting came to an end without any decision being made in connection with exclusive rights and further meetings are to be called.

I wonder if an agreement will ever be reached, because, in spite of public handshaking, a lot of personal hate will still exist. Anyway, good luck to the "dove of peace."

Printing your Films

ILLUSTRA Films have recently introduced a 16-mm. printing machine which is simple to operate. It is soundly constructed and should give years of service. It can be driven either by hand or by a small low-powered motor. The printer costs £8 and should prove a good investment. A photograph of the model appears in the advertisement columns of this *Journal*.

Alfred Hitchcock says

"Acquire a Real Knowledge of Cinema Technique"

ANY young technician entering films to-day should take a parallel from the instruction given to sailors learning the art of navigation. Just as the best of the present-day candidates for the Mercantile Marine have to pass through a sailing course as an elementary part of their training, so the young man of to-day entering the film world should learn true cinema before embarking upon the "talkie" side. So many young men working in British films at the present time have not got the requisite thorough knowledge of their medium—that is why we get films that are not true cinema, but are merely photographed reproductions of stage plays.

Talk is an adjunct of the cinema. To continue our parallel, it is a different means of propulsion for the film, as sail is a different means of propulsion for the ship from steam. But, just as the navigator has to learn the original and fundamental method of propelling the ship, *i.e.*, by sail, so the technician must first learn thoroughly the art of true cinema. Talk is the essential propulsion of the stage play, but is only an aid in the case of the cinema.

Only the other day the newspapers were full of the number of casualties there have been in recent years in the Mercantile service through the lack of proper sailing knowledge—when steam failed there was nothing to fall back on. So, in the same way, unless technicians concentrate on acquiring a real knowledge of cinema, they will have nothing to resort to.

I would say to anyone entering the film business—learn to use your imagination, to visualise things cinematically—study scripts, not merely as pieces of literature, but use your imagination and conjure up a picture of how each shot will appear on the screen. Learn as much about all sides of the business as you can—art direction, camera work, cutting, continuity—all such knowledge will be useful. Remember that talk is an embellishment of the cinema and a very helpful and necessary adjunct, but it is not a fundamental part. The ideal of the film is to present its story through visual image, dialogue being only an aid, somewhat in the same way as the sub-titles of silent days.

ALFRED HITCHCOCK at work on production of "THIRTY NINE STEPS," with Mrs Hitchcock and Miss Madeleine Carroll.
(Photograph by permission of Gaumont-British Picture Corporation, Ltd.).

From the Cutting Room

Sidney Cole

Convention in Films

There is a question we too rarely ask ourselves in films—"Why?" We continue to use the same methods until they lose whatever dramatic force they had when they were new and first thought of, and become mere conventions.

Wipes, for example. I am more and more convinced, by hearing the opinions of non-technical people, that the majority of the more elaborate wipes available to-day are disturbing or irritating to audiences. They too often interrupt the pictorial flow and so make the audience conscious of the mechanics of the film. And at bottom most of them are a clumsy means of covering up bad script construction. Their job could be better done by a mix or by more imaginative cutting—which means more imaginative scripting.

We have lost, I think, the convention of *always* starting in long shot, coming in to mid-shot, and then to close shot. But the convention of the establishing shot still lingers, though audiences don't really care whether they see the entire Albert Hall or not unless the shot means something. "Crime Without Passion" showed how little was needed to establish a definite locale. A restaurant, for example, was indicated quite thoroughly by a large settee with a table before it, a waiter who brought tea, and light tea-time music on the sound track. More imaginative—and cheaper.

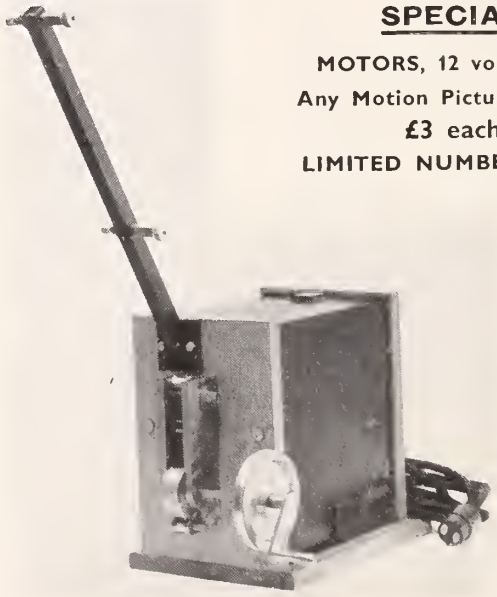
We are becoming less literal about the use of sound, which seems to me a good thing. At one time, directors would insist on re-recording together with their music and dialogue, all the natural sounds that would be going on in real life in the sequence shewn in the mute. The objection to this was that the result was not real at all. It was chaos. In real life, the ear is selective and rarely hears anything like the hullabaloo produced by re-recording eight or nine tracks together. The microphone is learning to be like the human ear, to *select* sounds—not just to record them. In many recent American films where a sequence is covered by music, no other sound is used. In "No Greater Glory," for example, this was so, even in scenes where a boy was chased and then ducked into the water. In "The Gay Divorce" the opening cabaret sequence was played without background atmosphere. If you can get all your points over by music, why blur them by doing them twice, with effects as well? After all, it is cheaper not to have to re-record.

We could vary our effects, too. The veteran noise of tearing cloth, for example, might be pensioned off after its long service. The Censor has already made us say good-bye to the raspberry, so that we haven't to think of substitutes for that. Our new effects may not be any funnier in themselves but they will gain by coming just at the moment when the audience is getting ready for the customary effect. (By the way, why does the heroine so often have to say "But you don't understand . . . ." or "I have something to tell you. . . . ." Perhaps the Censor could do something about that, too).

Couldn't we think up some new symbols for the passing of time, and so on, too. We have the leafless tree that dissolves into blossom—or vice versa—the calendar block whose leaves whirl away, the candle that burns down, the empty ash-tray that fills with cigarette ends, the soup-plate that dissolves to dessert, the hand that moves twice round the clock-face. Even the audiences are beginning to get tired of them, to feel bored when they see them again. With a little ingenuity, fresh transitions could be thought up, especially if they were regarded as important, and not casual, parts of the script.

Audiences are getting a little tired, too, I think, of some of the old parallels in cutting. You know—fat man eating, cut to pig snuffling in trough; man washing, cut to elephant washing. Some of them still get a laugh, it's true, but even that doesn't justify us not thinking up new ones. We ought to aim at keeping always at least one ahead of our audience.

If we use the same tricks too often, the audience will catch up with us. And if they catch up, they may go beyond us and stop going to the cinema at all. The only way we can prevent that is by asking ourselves continually, "Why am I using this particular method" and not taking "Because we always use it" as a satisfactory answer.



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Otto Kanturek

Through the Ground Glass

It gives me great pleasure to respond to the invitation to write for the first number of *The Journal of The Association of Cine-Technicians*. My association with the British Film Industry has been an extraordinarily pleasant one. British Films have a big future before them and I will always be pleased to do anything within my power to forward their interest and that of the technicians responsible for their production. May I take this opportunity to wish every success to British Film Technicians, their Association and particularly their Journal.

Many technicians—and Executives—fail to realise the link between newsreel and studio work which are now regarded as distinct professions. This is a pity, as the man who has learnt to get a picture under any conditions and to catch the atmosphere of anything from a race meeting to a state funeral is likely to do better film work than one who has never set foot outside a studio. In my own case, as one who has been active in both spheres, it is surprising to find how often in studio and location work one is repeating shots similar to actual newsreel shots — but under far less exacting conditions.

The present popularity of the historical film emphasises this fact. "Abdul Hamid" is an example. Both on location in Turkey and on sets built in the studio I was often reminded of the times when I actually photographed the Sultan of Turkey himself.

Otto Kanturek, the cameraman of "Blossom Time" and "Abdul Hamid," who is now directing his first British film, "I lost my heart in Heidelberg," for B.I.P.

Newsreel work calls for quick action and success at the first "take" is imperative, as a would-be assassin or "Derby" winner seldom has an opportunity to repeat his effort, however desirous he may be of publicity. "Forgotten Men," with its impressive and authentic shot of a battleship turning turtle, brought to mind the sinking of an Austrian dreadnought with the loss of 2000 lives. I was on another boat when the hit was heard ; we set up a camera in record time and secured an historical record of the whole disaster. Some of my earlier photography used in the same picture emphasises the advantages of air photography as a good training ground. During the War I gained a great deal of experience in this type of work, which will be ever present in my memory, as on the last day of the War I crashed—due, however, to a mechanical defect, but none the less alarming. There was many an exciting time and the film always seemed to run out at the wrong moment.

But, for the newsreel man peace time is equally exciting and provides as good experience. His calling enables him to witness many a scene denied to the ordinary individual. For example, I have been private cameraman to the Austrian Emperor, was the only newsreel man present at the Peace Treaties of Brest-Litovsk and Bucharest, got to know personally Lenin, Trotsky and Chicherin, and have travelled as far as few are able.

I photographed one of the earlier of sound films—twenty-two years ago when we took Caruso singing—using discs for sound, of course. Even before then I was in the industry and will always remember the occasion when I beheaded an archduke. It was when I was a laboratory assistant in Austria. Archduke Ferdinand was to attend a review nearby and the cameraman could not be found. Brimming with self-confidence I volunteered for the job, got my way, and turned the handle to perfection—so I thought. The developed film showed fine shots of massed troops, officers, band and everything else, except the Archduke, who persisted in appearing headless. The film was wasted and I was told that I would never make a cameraman.

Sound films have robbed the cameraman of some of his thunder, although producers have realised that the early talkies which indulged in long dialogue between people sitting rigidly on chairs are things of the past. Moving pictures must still provide something to look at. Often the right shot of an empty chair, an open window, or a glowing fire tells far more than words.

Suggestion rather than reproduction should be the aim of the cameraman. How often a long shot of a magnificent ballroom leaves one unimpressed. Whereas an audience might gain a far better impression of a wonderful party by shots of a glittering chandelier, two footmen, a pile of hats and cloaks, and the heads of half-a-dozen dancing couples. Atmosphere, too, is important. The reaction of the audience should never be "Are these people enjoying themselves ? " but "What a wonderful time they are having ! " Careful selection is essential. One of the most touching film death scenes I remember showed nothing but two pairs of hands, those of the dying man and his friend.

Other essentials are timing and choice of stories. For the former, a cameraman must be able to photograph a man walking down a corridor in such a way so as to impress upon the audience, if necessary, that he has been walking for hours. Choice of stories is always hard. It is almost

[*Continued on page* 6

New Diffusion Filters

Some Technical Data from Hollywood

At the A.C.T. recent film showing in the Pathe Theatre, of the Columbia Picture "No Greater Glory," the photographic excellence of the work by that A.S.C. crack, Joseph August, was loudly commented on during the technical debate that followed.

Mr. Percy Strong (A.C.T.), the well-known Lighting expert, remarked that August had no doubt used a Scheibe diffusing screen to procure such pleasing and level photography.

Some details of these filters, which have been obtained by the *Journal*, may interest our cameramen readers.

These filters are made of slightly mottled gelatine, mounted between optical flats. The gelatine is slightly blue in colour, cutting out the top of the red end of the spectrum.

Using these screens with modern high-speed anastigmat lenses enables the cameraman to produce a beautifully softened or diffused image without sacrificing the speed or correction of the lens.

These screens are made in the following strengths :—

$\frac{1}{64}$ and $\frac{1}{32}$ extremely mild diffusion.
$\frac{1}{8}$ and $\frac{1}{16}$ to be used for distant views.
$\frac{1}{4}$ delicate diffusion.
$\frac{1}{2}$ slight diffusion.
No. 1—Medium effect.
No. 2—For moderate close-up.
No. 3—For extreme close-up.

These filters can be used in combination with any other light filter and are also suitable for the making of projection prints from sharp negatives.

The Agent for Scheibe in this country is Vinten.

"Through the Ground Glass"

(*Continued from page* 5)

impossible to know if a story can be effectively told in pictures until the attempt has been made. Where the film scores is in its ability to make a street, a house, or even a country the chief actor as no stage play can.

The most essential aim of the cameraman should be to maintain *evenness* of quality. Nothing is more disturbing than to see distinct jumps in the quality of the photography from shot to shot. One shot may be really brilliant, but if it is followed by one of lesser quality, the grading is immediately reduced. The good shot loses its own value and at the same time the inferiority of the weaker shot is stressed.

I think it will be some time before colour photography completely replaces black and white. There must be radical changes in its presentation before people can sit three hours in a dark cinema looking at coloured pictures without discomfort.

In conclusion, may I advise film producers to spend a not inconsiderable part of their leisure in the cheap seats of suburban cinemas. They will learn much !

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S. S. A. Watkins

A Few Sound Remarks

For the first thirty years or so of its life, the motion picture increased wonderfully in size and beauty, but failed to develop a voice.

The art of pantomime being an exceedingly difficult one, it was quite impossible to convey to the audiences any but the most elementary ideas through the medium of gesture, and therefore narrative and dialogue were furnished by means of captions, simplified as much as possible to save programme time and displayed on the screen just long enough for the audience to read aloud all but the last line. On account of civilised man's inability to be comfortable in quiet surroundings, it was necessary to provide music, which developed from simple accompaniments on a piano to the full outbursts of organ or orchestra, with sound effects. This period is, retrospectively, known as the day of "silent" pictures.

Every caption flashed on the screen was of course a witness to the need for audible dialogue and, as soon as technical progress had advanced far enough, this became available and the "talking picture" was launched commercially. The public bewailed the passing of a great art built up on silent pantomime ; and crowded the box offices of the "sound theatres."

In the early days, few of those concerned with the exploitation of sound with pictures saw clearly beyond its use for musical accompaniments to silent films, and the reproduction of vocal and instrumental performances. It is true that the first presentations, in 1926, included speaking "shorts," but it was later and with some trepidation that dialogue was inserted into feature films. The makers of pictures had, of course, to adapt themselves to the new conditions. Their stars could no longer be beautiful but—mute. We of the audience could indulge in criticism of their accents, whereas in the "caption" days we were confined to an occasional gibe at their spelling. If you point out to me that this is unfair, since the stars did not write their own captions, I shall retort that nowadays they do not invariably sing their own songs.

After the world recovered from the shock of hearing the screen characters actually saying the things they had formerly been endeavouring to "get across" by gestures and telegraphic captions, the full acceptance of sound as an essential part of a motion picture took place rapidly. Fortunately, the quality of sound reproduction was, even at that time, acceptably good and audiences were not as critical of sound quality as they are now. During the very few years which have passed since then, there have been many changes in equipment and technique. Consider the process of re-recording which, to my knowledge, was first used tentatively in the winter of 1926. It has now grown to foremost importance in the making of a picture. It is interesting, by the way, to note how rear-projection, the pictorial equivalent of re-recording, has leapt into prominence in recent years.

The foundations of talking pictures, both in equipment and technique, were soundly laid before commercial exploitation was considered and the developments which have taken place since have been mainly improvements in degree, and adaptations to the practical requirements of the industry. These requirements—usually real, occasionally fancied—have sometimes acted as limitations to technical improvement, but the net result has been a very considerable gain in quality of product, in working conditions acceptable to the industry.

Whereas, at the beginning, sound was looked upon by some producers as an interloper, an added nuisance to be tolerated, I think it is fair to say that, to-day, it is as shortsighted a policy to turn out an otherwise good picture with bad sound, as it would be to neglect the photography in like manner. The degree to which dialogue should be used in a picture has been much discussed and not yet agreed upon. The reason for lack of agreement is obvious ; there is no answer. The amount of sound to be used and the manner of its use should depend upon what picture is being made. At present it is largely a matter of fashion. When sound first came in, it was used with timidity. Then followed a terrific rush of words, until even the public rebelled. Now we are seeing a swing of the pendulum back to a state of much less dialogue. The pendulum is usually at work somewhere or other in this motion picture business ; its greatest present activity being in the moral plane, where it is swinging violently from plus sex to minus sex.

At the present time, the sound camera is technically capable of being used as a medium of expression as exquisite as that provided by the picture camera. In my opinion one of the chief reasons why, given first-class equipment and an experienced sound crew, it frequently falls far short of this, is the sound system's great flexibility, which should be an asset but is often a drawback. Before the picture camera is turned over, the director must know what he wants to photograph. To add a crowd to a scene originally shot with only the principals is a difficult matter photographically, whereas to add crowd noise to the sound track is merely a matter of "dubbing it in afterwards," the magic words which too frequently cloak the fact that in planning the scene no thought whatever has been given to the composition of the sound. Again, if it were generally realised that it is sometimes as difficult to remove a defect in an actor's voice by "dubbing" as it is to remove a wart on his nose in the printing, doubtless more importance would be attached to voice tests.

I make a plea to directors to extend to their sound cameras the consideration they give their picture cameras. In the pictures in which this has been done—a small but growing aristocracy—the results speak for themselves.

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Cinema Log

Colour

COLOUR has been the foremost topic during the first quarter of the year and, although it has still to become a permanent feature of our screens, rapid progress is being made. Colour, therefore, will be the main topic of our log.

Spectracolor.

Two of our members, Albert Hopkins and Reginald Wyer, Joint Managing Directors of Publicity Pictures Ltd., have successfully commercialised a Bi-Pact Process under the above name. Their first colour musical feature, "Faust," shewn recently to the press, was very well received and their coloured advertising cartoons are on general release throughout the cinemas.

This young firm has tackled the colour question so well that they have received contracts to make a further number of coloured features, principally of a musical character. The sound in this process is first-class, and they can print either variable area or density, giving good volume and sharp reproduction.

They have designed their own camera gear and their Cartoon quality is steadily improving.

Brewster Colour.

This is another process in which an A.C.T. member—Albert Arch—is the responsible technician. It is a three-colour substractive process, and in principle differs from Technicolour, which uses the Bi-Pact red and blue and a separate green negative with two gates. Brewster Colour has three separate gates, each fed by its own magazine. The camera, which weighs two and a half hundredweight, is driven by a main shaft. Each gate is fitted with registration pins and, of course, great care is necessary in loading.

The negatives used are Dupont Pan for red and emulsions sensitized for blue and green. In photographing the blue no filter is used. For green or red, of course, filters are used. The camera at present in use is experimental. New cameras now being built in America have an entirely different system of reflecting the image. This will be done by the ingenious device of revolving mirrors.

The actual images are reflected by three mirrors simultaneously. Dr. D. A. Spencer, Vice-President of the Royal Photographic Society, said that, as he understood it, the main claim of the process was the ingenious camera. This was invented in 1932 and was based on the principle of a beam-splitter. Light from a single lens was divided up inside the camera, so that it recorded on three separate films, and use was made of metallic mirrors.

These were arranged propeller-wise inside each other. When the mirror made one revolution, the whole of one image was completed, but as the vanes had apertures in them, light was also being transmitted for the formation of the second image, the revolutions of the vanes being arranged so ingeniously that they did not interfere with one another. To ensure a steady picture on each of the frames meant a very high precision job in the camera construction.

The idea of this is to avoid any loss of light, as is the case when using prisms. The actual processing is secret, but on observation it appears to be a form of dye-toning. They claim that their yellows and whites are far truer than in any existing process, due to a special yellow dye used by the laboratory.

Speaking to the Colour Group of the Royal Photographic Society after the shewing of the Brewster film, "Let's Look at London," Mr. Arch said that he made the film last October, and was not quite *au fait* with the actual working of the camera gear. The film shewn was made under mixed weather conditions, as the camera had to be returned to America within a specified time to conform with Customs requirements. The film had very good colour rendering. In one section scenes taken at the Gaumont Studios were shown. These were taken under normal black and white lighting, the set being approximately eighteen feet square and the amount of current used being three hundred and twenty amps. At present the negative has to go to America for processing, but a British laboratory is to be built, the site for which has been purchased at Wembley. The cost of the positive will be approximately 3½d per foot, and, of course, the additional cost of the two extra negatives.

Vibration was noticed in one or two scenes. This was due to the motor in the camera being of an American type for sixty cycles, making it necessary to fix a quarter horse motor of 50 cycles on the side of the camera when taking in this country. This temporary fixing caused the vibration. A series of new motors have been ordered, so that the three cameras, now being built, can be used in any studio in this country. To me, the finest colour was a yellow velvet seen in a mannequin parade, whilst the green in the exteriors was very true, and the general fidelity of the colours very pleasing. This process has no detrimental effect on sound, the track remaining white on a red ground.

Kodak's New Colour.

Somehow the words "Kodak" and "colour" seem to flow easily together, and rumour has it that a very simple process will shortly emerge from this house. Another screen process, I believe . . . beautiful rendering, easily processed. Dr. Kenneth Mees and his experts are working under a heavy cloak of secrecy to perfect it. It is the invention of a Continental technician, and I hope to give more details in the next issue of the *Journal*. One of this process's greatest attractions is that it will be available to the whole trade and will need no special camera gear.

Gone to Foreign Parts.

Just had a note from Roy Fogwell to say he is well on the way to Shanghai with the Ward Wing Unit to produce a picture in the East. Glad they have an A.C.T. cameraman and wish them luck. By the way, Nell Emerald is with them. She is Stanley Lupino's sister-in-law, and was my "boss" in the old "Britannia Film" days, and is, I believe, financially interested.

Nineteen Hundred — Nineteen Thirty-Five.

Cherry Kearton, world-famous Animal Cinematographer, has compiled a film dealing with his exploits in Africa during thirty-five years, which is being shown at the Regent Street Polytechnic. Cherry is still actively engaged with the camera and, I believe, will head another Photographic Expedition to his beloved Africa.

He was responsible for the construction of the first spring-driven automatic camera and was a leading light in the floatation of the "Aeroscope."

A.C.T. wish him every success, and I am sure we shall procure him to give one of his famous lectures to our members during the latter part of the year.

KENNETH GORDON.

Success to the "Journal"

Messages from the Association's Patrons

I SHOULD like to congratulate the Association of Cine-Technicians on their enterprise in publishing a *Journal*.

Any organisation to be successful must have an easy means of communication with its members, apart from their attendance at meetings, and there is no doubt that a *Journal* does provide a bond of union which it is difficult to create in any other way.

The great advance which is being made by the British Cinema Industry naturally depends on many factors, and I wish all good luck to the members of the Association in their efforts to raise the status of the industry to which they are attached, and to preserve for themselves a proper position within that industry.

HERBERT G. WILLIAMS, M.P.

I AM glad to write a few words of encouragement and good wishes for the Association of Cine-Technicians.

It is a great pleasure to me to feel myself associated with an Organisation doing such excellent work. It is, in my view, of the utmost importance that the Association should go forward efficiently organised with a long-term policy and with its plans well-determined.

The film industry in England is going to grow by leaps and bounds as time goes on, and will undoubtedly become one of the most important of British industries. The part played by technicians is of course of primary importance to the wellbeing and the success of the industry.

That technicians should be members of an Association such as ours, which can watch their interests and plan for their future position in the industry, seems to me a very wise and statesman-like policy.

I send my good wishes to the Organisation with great pleasure, and I only hope that I may be able to be of some service from time to time to this work, which may well become of national importance.

KENNETH DE COURCY.

I WOULD like to send all my very best of good wishes to the Association of Cine-Technicians, and in particular to the first number of the *Journal*, which I understand will shortly be published.

It must be a source of pride and pleasure to all the members of the Association of Cine-Technicians to note the consistent progress which has been so particularly in evidence during the past year, in the general standard of British Films. This must have been very largely due to the splendid efforts of the members of the Association of Cine-Technicians, and must, I am sure, be a source of pride to them. The world as a whole, and the British public in particular, has shown to an increasing degree how much they appreciate the vastly improved standard of technique involved.

I hope most sincerely that the Association will continue to receive the support of all those employed in the industry who may be eligible for its membership, and I am certain that as long as its efforts continue to be wisely directed, the Association will be capable of doing a very great deal to help its members and watch over their welfare.

The Rt. Hon. EARL HOWE, P.C., C.B.E., V.D.

Photograph] [Lewis Protheroe

Composite Make-up Study

STILL CEDRIC HAIN

Unit at work on the Butcher-Panther Production "Cock o' The North" at the Stoll Studios. Directed by Oswald A. Mitchell and Challis Sanderson. Featuring Marie Lohr, George Carney and Ronnie Hepworth.

Stills

STILL] [L. BEATTIE.
(By kind permission of British International Pictures, Ltd.).

Difficulties of a "Still Man"

ELSEWHERE in this *Journal*, Connery Chappell mentions one aspect of the difficulties of "Still" work. Mr. H. W. Devereux (Joe Rock Productions) tells us that he fully appreciates that the task of the still man is not an envious one, but that he is fortunate in being in the happy position of being employed by a production company which fully realises the importance of good stills—obtainable, of course, only by the fullest co-operation of everyone concerned.

But there are certain aspects of still work over which neither companies or critics have the slightest control or influence, namely work on location. Mr. Devereux recently accompanied the Leslie Fuller unit to Morocco for scenes for the Joe Rock Production, "The Stoker." Excited natives could not resist the joy of watching apparatus—new to them being worked and the still man was constantly beseiged by hordes of inquisitive folk doing their best to probe the inner secrets of a camera and on its removal being overwilling to lend a helping hand. The natives were equally determined to be included in every exposure made and before his next trip abroad Mr. Devereux intends to muster some little knowledge of the native tongue—not that it will have any effect, but the still man will at least have the satisfaction of knowing that his audience will appreciate they are being "told off."

TANGIERS—STILL BY H. W. DEVEREUX.
(Taken on location with Leslie Fuller Unit in Morocco for forthcoming Joe Rock Production, "The Stoker")

The Art of Make-up: Its Uses and Mis-uses

Harry Davo *(B.I.P. Make-up Chief)*

MAKE-UP and its study has to-day become a highly skilled craft of Motion Picture production, and a few simple deductions of mine, obtained after many years' experience, may help to assist the cameraman to detect faults before the screen has demanded a re-take through badly finished make-up, with its waste of negative stock and time.

The make-up expert must first acquaint himself with the lighting used by the cameraman and the colour and tone of the sets from the Art Department.

For a long time at Elstree the lighting used by Claude Friese-Greene and Jack Cox has called for a dark make-up (No. 27 for ladies and No. 29 for gentlemen), in which case shading on the eyes and the lips must be darkened accordingly. Lately we have had Otto Kanturek in our midst, who suddenly thrust upon us a light make-up (No. 25 for ladies and No. 27 for gentlemen), and which has been accepted by many of the cameramen lately. Otto Kanturek uses very light sets, such as whites, light greys, silver, etc. One will always find a lot of shadows, such as vases, windows, or any object on the set which he finds he can use with effect, and it is effect too.

The use of very soft frontal lighting, so that the shadow effects are not destroyed, necessitates a light make-up.

Now back to the make-up. Plenty of time should always be taken on every individual artiste to get that smooth unpastelike effect. The foundation or groundwork should be used thinly, but at the same time sufficient to cover freckles and blemishes and well smoothed into the skin to avoid streaks. Eye shading, whether brown or a medium grey, which by the way is a very successful colour applied correctly, should almost fade away at the eyebrows. In the case of women this should be left greasy. A line under the lower lashes is not always effective, except in the case of grey or light brown eyes. Lines reaching the inside of the eyes near the nose tend to make the eyes narrower instead of fetching them out. Brown lines can be used on the outsides of the eyes to add to their length, but should be softened down. The pencilling of the eyebrows is always a job that needs careful attention, as a face has to be studied well before deciding on a suitable shape. In most cases freak eyebrows and long thin lines look what they are—just pencil marks. Now for the lips, which also have to be made to suit the shape of the face. In practically all cases the top lip should be made fairly deep, as it is lost when speaking words commencing with B, M, P, etc. Naturally in a small face you don't want it all mouth, but in a large face you will find a lot of space to fill up, so make the eyes, eyebrows and mouth accordingly large.

The hair should also be put forward or behind the ears or on the forehead, as the case may be, to help to get the best results of the features.

After settling down to a straight make-up to suit the individual lighting, we come to a more intricate part of the make-up, which involves the uses of shading and different colours, some of which I will mention here, as they are very often necessary.

The shading of the jawbones, which is often required, should be done—in the case of a dark make-up—by a light-brown shading such as Max Factor 21 lining and used very sparingly, otherwise it will make a very nasty patch around the jaw. If one is using a 24 or 25 foundation, the shading can be done with effect by using No. 29 Max Factor grease paint. Taking the broadness off the nose can be done in a similar way.

In the case of a man with a dark chin, it is advisable to first cover the chin with a light grease paint to tone it down, afterwards putting the foundation on in the usual way. Also dark rings around the eyes should be obliterated in the same way, and, if necessary, a light colour put on afterwards. Dark shading should be avoided on deep-set eyes, and in its place a green gold or blue gold should be substituted accordingly.

It is difficult to explain the right colour or right amount of colour necessary in such cases until one actually comes in contact with the subject that is being made up.

It must always be remembered not to have too much shading, etc., on in the first place, as it is much easier to add to it than to reduce it once it has been powdered.

Colour Cinematograph Patents

THE close attention to the patent news should keep our readers in touch with the rapid developments taking place, almost daily, in connection with colour cinematography.

Five applications for patents dealing with colour have been made in the last five weeks. These are Colour Cinematography, No. 5234, P. Angenieux and J. M. Gutman; Colour Photography, No. 4774. Producing Colour Photographic Materials, B. Gasper, who has a colour film process, to which no doubt he will apply this patent; Lenticular Films No. 6412, Production of Copies of Colour-recorded Lenticular Films, Messrs. Opticolor Akt-Ges; Colour Cameras, No. 6117, Multi-colour Camera N.E. Reckmeier; and Colour Cinematography, No. 5887, A. R. Trist.

During this period the following complete specifications have been open for public inspection:—No. 23871, Apparatus for taking Photographic or Cinematographic Views in Colour, A. J. Arnelf; No. 2413, Apparatus for copying Lenticular Films by Optical Projection, Messrs. Opticolor Akt-Ges; Method of producing Photographic Dye-stuff Images, No. 51788, Dr. B. Gasper.

Messrs. Opticolor have three more specifications for inspection. Copying Color-record and other Lenticular Films by Optical Projection, No. 24652; Apparatus for copying Lenticular Films by Optical Projection, No. 24771; and the Projection of Lenticular Films, No. 24782.

Artists, Technicians and British Films

By Edward Carrick

THAT English films on the whole are bad and lack all artistic qualities cannot be denied by any of us.

But who is to blame—the "old stagers" who were in charge when we first got our jobs? No—it is we Technicians, who are content to earn our salaries and keep our jobs with as little exertion as possible—we are not asked to do any more—and the atmosphere of a film studio, which is like a galley on the high seas loaded with slaves and gold and bound for nowhere, does not help.

But there is more to it than that. Hardly any of us know our jobs—we have all learnt our craft to a certain extent, but few have bothered to become artists in that craft—and until every Technical Director in a film studio realises that he cannot assist in the production of a work of art without he is an artist and has studied as such; that studio will never produce anything but a hotch-potch of ideas called an entertainment, which the poor public accepts because it can get no better.

A painter does not just learn the chemical composition of colours and how to look after his brushes and prepare a canvas. Learning anatomy and the construction of animal and vegetable forms, perspective, colour values and harmony, reflected light and cast shadows, the balance of form, etc., are all part of his training, and he generally learns photography, modelling, engraving, and the history of costume as well.

But in the Film Business how many Art Directors have studied the harmonies of form in architecture, the dramatic value of line, or the psychological effect of colour on the different peoples of the world?

Where are the Sound Technicians who understand the composition of a fugue, or know the effect of different musical instruments on the brain with the eyes open or closed? Or photographers who have studied reflected light in nature, or the rythmic value of light and shade?

Where are the cutters that have studied optometry or the sensory apparatus of the body? *And where are the directors*—those who must direct or collaborate with all the departments I have just mentioned—the supreme artist of the film production, who as well as studying all these things should be the keenest student of human psychology?

One can find hundreds of fine Technicians, such as Art Directors, who can build a set in a night—and know their periods backwards; Sound Men who can record everything that can be heard; Photographers who can match up an exterior shot with an interior shot and keep a beautiful even tone throughout a whole film, and so on. But that is as much use as a sign-writer who can draw all the letters in the alphabet perfectly, but has not the artistry to space his words and balance his black and white in order that the whole work will be satisfying to the eye as well as legible.

We shall never produce a work of art in the film world until the technician takes his craft seriously, forgets that six o'clock is the time to stop work, and studies until he has become master of his craft—an artist in the original sense of the word.

Of course there are no special schools or experimental studios where we can go and study, although one would suppose that the many film concerns who collectively allude to themselves as an INDUSTRY would have seen by now that this was essential for their own well-being.

But because an Industry wishes to lose hundreds of thousands of pounds a year rather than bother to make it possible for the technicians employed to know their jobs properly, there is no reason why we should sit down and accept it as such. When the technicians are united, which will be after they have all come to appreciate the fact that they are collaborating in making a work of art, and for such a task must equip themselves as Artists—then the Industry is *theirs*.

Until that time comes we may clock in and out of film studios and be told by "old stagers who know" how to do our own jobs; we can grumble in the canteens over a cup of tea, and money will continue to be thrown down the usual studio drains.

The "old stagers" in the film business, like so many other rackets, have to keep their jobs. One way they have of doing this is by keeping art, or anything associated with it, out of the way—they *have* to use the the technician—but the technician cannot succeed without the artist, so why not let us unite?

The Royal Photographic Society

THE informal meetings of the Kinematograph Group of the Society are held on the fourth Friday each month when the items of interest to professsional Kine workers are presented at 7.45 p.m. The Group has been fortunate in securing the collaboration of the Association in forming its lecture programme, both during last year's Kine Exhibition, and at the recent discussion between Mr. Thorold Dickinson and Mr. S. H. Cole.

Meetings of the Society covering other aspects of photography will be of interest to Association members, more particularly those sponsored by the Scientific and Technical Group. Information concerning these will be notified from time to time in the Association circular.

November, 1935, will be the occasion of a special Exhibition at Russell Square devoted to Kinematography, when apparatus and still photographs will be displayed and a strong programme of lectures arranged.

Enquiries relating to Group matters can be addressed to the Group Secretary, c/o 35 Russell Square, who will be pleased to arrange for the introduction of non-members to any of the Society meetings.

Forthcoming lectures include:—

Tuesday, May 21st, 7 p.m.
Demonstration R.C.A. 16 mm. Sound Camera.

Friday, May 24th, 7.45 p.m.
"The Coloured Sound Cartoon." A. E. C. Hopkins, Esq.

Message from

A. S. Attkins

(Chief Sound Engineer, British International Pictures, Ltd.)

RECORDING as a profession commenced in this country some five years ago, and has developed along very definite lines, but, unfortunately, each Studio has been responsible for its own progress.

For a long time it has been felt that a Society of Studio Engineers and Technicians was needed in order that co-operation with other studios could be obtained.

The engineering profession has always blazed the trail of co-operation, as instanced by the various Institutes of Electrical, Mechanical and Civil Engineers. Members of these institutions can fully appreciate the help and assistance given by this co-operation with other engineers. It has therefore always seemed a great pity that technicians of the Cinema Industry should work in isolated groups.

I do feel that The Association of Cine-Technicians will meet this demand, and through its meetings and publication of this Journal, be the means not only of co-ordinating ideas, but of developing Studio Engineering along more definite lines, based on an interchange of the practice of the various studios. Such co-operation between technicians will eventually mean, I feel certain, that this country will lead the way in good solid Cinema Engineering technique.

"PHOTOGRAPHY"

SIXPENCE MONTHLY

Special Cinematography Supplement dealing with the Art and Commerce of the Film

Regular notes supplied by the Association of Cine-Technians dealing with activities of the Association and comments on news of interest to film technicians.

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Connery Chappell

I Make a Bet

("Sunday Dispatch" Film Critic)

One of the things which hits you between the eyes about being a film critic is the painful necessity of occasionally wandering up Wardour Street.

One wisecracker argued that it is the only street in the world which is shady on both sides.

We ourselves have never found that. Indeed, we argue that, as far as we are concerned, it keeps up an amazingly high standard of hospitality.

However, it does contain Ken Gordon, who looms before you, like a traffic jam, and blandly cuts off advance and retreat.

Before you know where you are you have promised to write an article for the first number of a new paper, devoid of ideas, minus in humour, sadly lacking in theories, and suffering from a mild dose of 'flu.

So you see the position we are in.

However, the old pulpit has never conked out yet.

So we can start off by telling you film technicians exactly where you get off.

But before we get really personal, we can add that we don't altogether blame you.

We know perfectly well that there are producers in this country who expect to give their men a couple of torch lights and an eye-glass and still get the sort of results which make Lubitsch comedies look as though they are out of focus.

But we also know, thank goodness, that those producers are rapidly fading out.

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I do think, when you look back on it, that you must agree that the technical standard of British films has improved in the last three years by approximately ten million light years and a couple of astral planes.

This is not altogether due to the sudden discovery that we have technicians among us capable of good work, but rather to the fact that producers are at last giving them a chance.

That there is still room for improvement cannot be denied, but we can be fairly certain that such improvement will be made.

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I know perfectly well that it is very difficult, and often very unfair, to blame technicians for bad work when the responsibility of it is not theirs.

Take the case of the cutter who has evolved a masterpiece which looks about as long as the Bible and about as interesting as a railway time-table.

The critic, sitting back among his caviare and his cigars, with an assortment of nubile maidens ministering to his slightest whim, is inclined to yawn, stretch for the champagne bottle, and describe the picture as "lousy."

He then blames the cutter for having done a job of work which makes eternity look like a second.

But why blame the cutter, when the quickie producer who sponsored the epic deliberately stipulated that the film must run 7000 feet—and then only shot about four reels, in duplicate?

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It's the same story with most other branches of film production.

If you're in a studio where they give you a chance, you can deliver something worth while.

If you are not, the lad round the corner judges by results and says you're overpaid at a fiver a week.

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But, to be deadly serious, there are some insults I want to pour on you long-suffering title-stealers.

First of all: stills.

You, being a sensible fellow, know perfectly well that stills sell pictures.

You also know that art editors of important newspapers are pretty good judges of a good still.

And, unfortunately, you equally know that in the great majority of cases the average still man is given about five seconds in which to do his stuff.

The result, more often than not, is pretty dire, and the still man gets blamed.

It isn't his fault; he has a perfect alibi, but nobody, except the people who understand, will believe him.

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So I do suggest that if an Association of Cine-Technicians is to mean anything, the first thing it should do would be to get better working conditions for the men who indirectly sell pictures.

I'm not denying that we have good still men; we have.

But I do deny that a single one of them gives anything like his best work.

And, seeing the conditions under which he is expected to make Nelson's Column look romantic, I don't blame him.

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Next in my list of do's and dont's, we can get down to cutters.

We have already agreed that the poor devil who pads out quickies should be let off with nothing worse than a caution.

But I do seriously think that cutting is the one branch of the film production racket where you lads take a painful landslide.

The best British pictures are nearly always cut like a funeral procession, without the business of quota footage as an alibi.

Of course, you can come back with the reminder that it's always the fault of the producer, but I doubt it.

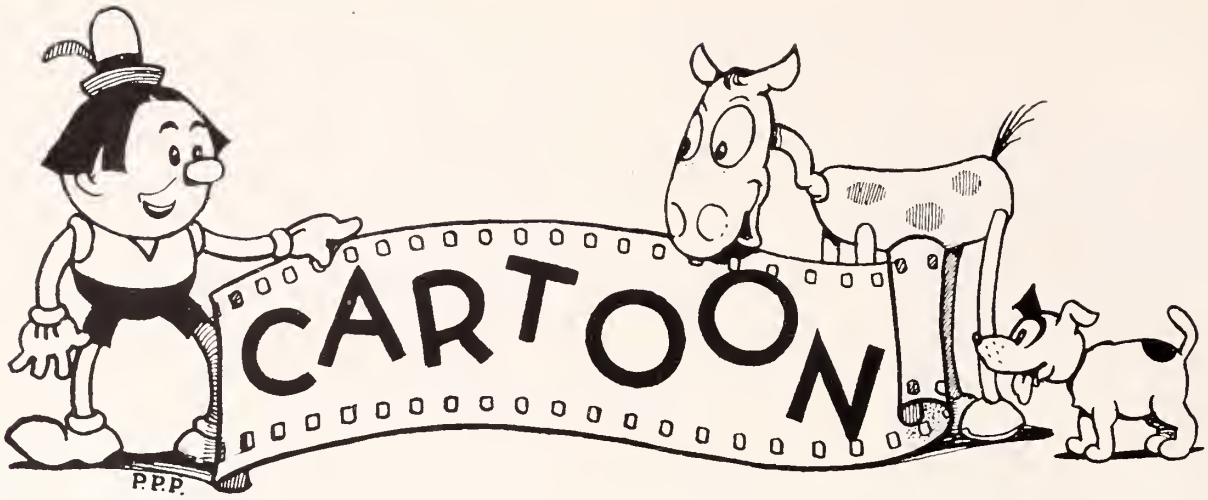
Cutting, over here, seem to me to be sadly under Hollywood standard.

Our cameramen do good work, some of them amazingly good. But our cutters don't, with perhaps two exceptions.

There is far too much suggestion of old-fashioned technique about our editing.

I don't like the way British cutters blandly cross cut between shots whose light intensity on the screen is so

[*Continued on page* 16



PUBLIC and professional interest in cartoon has been greatly on the increase during the last few years, and it would seem that after a somewhat tortuous and intermittent career this form of art has established itself on a firm entertainment basis. Its rise to recognition has all the romantic elements of the familiar "Local Boy Makes Good" story; starting in life as the small child of the film programme, permitted as a treat to spend five minutes of "seen and not heard" on the screen, and graduating to the sophisticated glories of the infant prodigy, festooned with press cuttings and girdled with blazing Neon tubes. This, of course, has been a gradual campaign, involving the shedding of quantities of ink and the massacre of the battalions of superlatives, and has been the means of affording endless proof of the doggedness and versatility of those whose business it is to supply information; indeed, so much has been written about it that there can be very few cartoon fans left to-day who are not familiar with all the essential steps in the process of manufacture.

It is a debatable point whether this frank exposure has deepened or dispelled the mystery that seems to have been associated with the art in the public mind; at least it makes it all the more startling to meet, as one still does from time to time, a genuine surviving theory of the old school, whereby the drawings are placed in a sort of chute and photographed with great speed and dexterity as they "flash past"; but, apart from visions such as these, the difficulty to-day is not so much to bring the past up-to-date as to identify all the different cartoon characters converging from all sides and to keep in touch with the progress of the various techniques, more than ever diversified by the eruption of colour rashes and the early symptoms of acute stereoscopy.

These last two points have a particular bearing upon cartoon quite apart from their relation to straight films, and promise to provide a fruitful source of argument. Cartoon has become expensive enough to be discussed rationally and already there are several schools of thought in existence transferred more or less *en bloc* from the realms of static art; thus we have the realists, the fantastics, the comic cuts, the whimsicals and others, all building up their particular traditions, techniques and colour scales, and all at variance with each other over most points of treatment from backgrounds to anatomy.

It is not surprising in these circumstances that much new ground is being broken and new names being invented for all the old tricks. The synchronisation of music has alone opened up entirely new fields of applied humour almost independent of drawing, and which are only now being realised and exploited. It is true that an original gag has only to "get over," in order to be conscientiously "plugged" and pirated until it falls apart from hard wear and tear and ceases to be recognised as a gag, but the various styles have sorted themselves out so far that it is unusual now to find them trespassing on each other's territory.

There is one point, however, where nearly all of these cartoon systems have come to a focus, and that is in the treating of the screen as a page of a book rather than as a window giving on to a view beyond. Until stereoscopy arrives to give true depth to the moving figures, there is little question but that this is the more logical treatment. If the stereoscopic view is to be applied to cartoon it will cause the widest readjustment of technique since the introduction of synchronised music, and the cartoon characters will marry forthwith into the Marionette family against a quasi-model background. It is a matter for speculation whether the union will be blessed.

C. F. M.

I Make a Bet—(*continued from page* 15).

contradictory that the actual cut is like a quick blow in the tummy.

And I have never yet seen a British film, with the exception of one or two atrocities turned out by the green-shirted lads from the Cafe Royal, with any attempt at rhythmic editing in it.

Spare my blushes, but I really do think that it's important. You watch the cutting of the best Hollywood pictures and see the difference.

One word before dismissing the thorny subject; why are so many British pictures printed in that rich old sepia which looks like a mummified old gentleman from the British Museum?

Plain black and white would be so much better.

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One final word, before we give up the ghost and admit that we have no ideas.

While American actresses may think our policemen are wonderful, I think our script writers are adjectival.

Show me a single one who is capable of earning £100 a week at Metro Goldwyn and I'll pay you the price of this article.

And, lads, that's some bet.

Organising The Cine-Technician

By George H. Elvin

(Secretary and Organiser, The Association of Cine-Technicians)

We all know the story of the old lady who entered her mongrel dog for thoroughbred competitions—not for the prizes to be won, but for the company with which it would be associated. Similar reasoning might apply when summing up the advantages of joining an Association. Paradoxically, a member is indeed fortunate who always pays in and never draws out. How many members WANT to use the A.C.T. Employment Bureau; who WANTS to work under sweated conditions so that the Association should have need to act; is there a member or potential member ANXIOUS to avail himself of the Unemployment, Health and Hospital Benefits to which attention is drawn elsewhere in this issue; is there a member ANXIOUS to need legal advice; and so on. No such member could be found, but should a technician be so unfortunate as to need any such benefits they are available. Modern economic conditions dictate that no one, whether employer or employee, can afford to be without an organisation to look after his welfare.

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On the other hand, there are secondary benefits of which all can take advantage. A desire has been expressed for educational activities and accordingly the Association intends to organise fortnightly throughout each winter alternate lectures and film shows at the Pathé Theatre, Wardour Street, W.1, by kind permission of Pathé Pictures Ltd. Three such functions have been organised this year as a prelude to a regular programme beginning next October. In addition, members are invited to attend the regular meetings of the British Kinematograph Society and Royal Photographic Society. Lastly, without the Association of Cine-Technicians there would not be this *Journal*, and we are proud to take credit for publishing the only British Film Technical Journal.

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The membership of the Association is growing at no slow pace. There is no important Studio where we are without members and few where membership is not growing rapidly. But only when we are a hundred per cent. strong — a day not far distant — can the full benefits of membership be realised. We have not sought our members by force—or even rhetoric but by quietly pointing out the advantages of membership. In time, we are confident these methods will bring every film technician into our Association when it will be to members' own interests to insist that only A.C.T. members shall work in a British Studio.

◇ ◇ ◇

The term "closed shop" is one which frightens some persons. Why should it? Let me quote the leading article of a prominent "daily" in reference to Equity's dispute on that question:—

> "There is no half-way house between the open shop and the closed shop. There is no half-way house, that is, between a disorganised profession, helpless to check abuses, to standardise conditions, or to negotiate for better ones, and an organised profession. . . . . .
>
> Equity brings no menace to the good producer. On the contrary, it offers a simplification on many problems and a recognised channel of discussion."

Equity has won its battle and managements generally realise that the profession as a whole will benefit. Similarly, the Film Industry will benefit when all technicians realise the benefits of organisation. Most of them are doing so, from the lowest to the highest grade. We feel sure the rest will soon fall into line.

◇ ◇ ◇

What has A.C.T. done during the past quarter? It has prepared a questionnaire on hours and conditions which is at present in circulation. On its return, the Association will be able to prepare a full statement of salaries, hours and conditions in the Film Industry. Already, one Executive has assured us that it will be pleased to remedy any anomaly in its own Studio conditions that the results may disclose. We are equally confident that other Executives will act similarly.

◇ ◇ ◇

Through our Employment Bureau we have been able to find situations for several of our disengaged members. There are still many unemployed, through no fault of theirs or ours, but all Studios have been notified of this feature of our work and we are pleased to note that several of them have promised to utilise this Bureau as and when additional staff is required.

Contact has been established with the appropriate authorities and the Association's opinion is taken on application for a permit to work in this country by a technician from abroad. Our Employment Bureau is used as the barometer for guidance in these cases.

◇ ◇ ◇

Constant touch is maintained with members by the General Council and officers through the medium of District Meetings, and we are pleased to note the following resolution which was unanimously passed at a recent meeting of Elstree Technicians:—

> "This meeting of Elstree Film Technicians expresses confidence in the Association of Cine-Technicians as the sole organisation catering for film technicians of all departments and grades, and notes with pleasure its recent activities on behalf of members."

◇ ◇ ◇

Unemployment, Health and Hospital Benefits are now available to members as a result of negotiations carried on throughout the past few months. Educational facilities have been mentioned earlier in these notes and the *Journal* speaks for itself.

◇ ◇ ◇

THE ANNUAL GENERAL MEETING OF THE ASSOCIATION will be held at the Poland Rehearsal Rooms, 49 Poland Street, W.1, on Monday, May 27th, at 9 p.m., when it is hoped as many members as possible will be in attendance to hear a full report of the past year's work and elect officers for the ensuing year.

The Manor House Hospital

Membership Available to A.C.T. Members

MANY of us fight shy of hospitals, either because we have a natural aversion to all institutions or because we think that by paying nursing home or specialist fees better treatment is secured. It is not our place to argue the truth or otherwise of this tendency, but we do know that such reluctance and belief is definitely untrue of the Manor House Hospital—one that is probably unique both in its management and character.

The Great War was responsible for the Manor House Hospital; Peace Time has seen that the good work done then has been continued. The casualities of peace—accidents at work or away from it—can be just as damaging as injuries of war.

Members of the Association of Cine-Technicians may join 200,000 others in becoming members of this Hospital—privately owned and controlled by its members.

Advantages of Membership.

The following are some of the advantages which the Hospital offers:—

(1) The very best medical care and surgical skill.

(2) Specialist consultations and advice. Accommodation, not in a general public hospital in the middle of a great city, surrounded by a constant roar of traffic, but in a private hospital, owned by its members, in pleasant surroundings at Golders Green, on the outskirts of London, within easy access from every district.

(3) Free ambulance service.

(4) A well-equipped Out-Patients' Department.

(5) Qualified Optical and Dental Treatment under favourable terms.

IVY HOUSE, HAMPSTEAD, THE RESIDENCE OF THE LATE MADAME ANNA PAVLOVA, PURCHASED FOR THE CREATION OF A WOMEN'S HOSPITAL.

Rates of Subscriptions.

There are two rates of subscriptions, both of which entitle contributors to full benefits, and BY JOINING THROUGH A.C.T. the customary qualifying period is waived and BENEFITS MAY START AT ONCE. Those earning less that £250 per annum pay a penny per week; those earning over that sum subscribe an annual fee of One Guinea.

What are the circumstances and conditions most to be desired about a hospital? They are, surely, that the treatment shall be of the best, the surroundings shall be as pleasing as possible, the atmosphere shall be friendly and conducive to wellbeing and devoid of any charitable taint, and, nevertheless, the cost shall not be prohibitive. The Manor House Hospital fills the bill in all respects.

It should be pointed out that the full facilities of the Hospital are not at present available to women. The Dental and Optical sections are, however, open to them and therefore make the scheme worthy of consideration even in its limited application, and it may be mentioned that steps have already been taken which it is hoped will lead to the building of a new Women's Hospital in close proximity to the present building.

Payment of Subscriptions.

For the payment of subscriptions there will be an appropriate column on the new A.C.T. membership cards to be issued the first week in June. After the first payment, and as long as payments continue, members will be entitled to all the benefits the hospital affords. We hope all our members will take advantage of this fine opportunity. They cannot spend a penny a week, or a guinea a year, as the case may be, more wisely.

Cinematograph Trade Provident Institution

During the past few months the General Council of the Association of Cine-Technicians has examined various methods of obtaining Health and Unemployment benefits for members. It was felt impracticable to inaugurate our own A.C.T. Insurance Scheme, and of those examined the benefits offered by the Cinematograph Trade Provident Institution seemed, in proportion to the contributions levied, to be the most suitable for our purpose. Negotiations were opened for a block A.C.T. affiliation at special rates. These negotiations are not yet concluded, but there seems to be little likelihood of a tangible result along the lines of the Council's main proposals, although minor concessions may be arranged, such as a reduction in the twelve months qualifying period.

In the course of conversations with the representative of the Institution, the A.C.T. officials mentioned certain criticisms of its operations which were discussed. Enquiries were made as to the A.C.T. representation on the Management Committee. It seemed that the Association could not be represented as such, but only through individuals elected in the normal way, and since the meetings of the Committee are held in the early afternoon, it would be impossible for A.C.T. individuals, even if elected, to attend.

For members who may desire to join the Institution on their own initiative follow details of the scheme supplied by its Secretary.

The Cinematograph Trade Provident Institution, registered Friendly Society, is affiliated to the Cinematograph Trade Benevolent Fund, and membership is open to any who earn their livelihood in the Cinematograph Industry. The rates of Subscriptions and Benefits are as follows :—

"A" MEMBERSHIP for those who earn LESS THAN £250 PER ANNUM.
"B" MEMBERSHIP for those who earn £250 PER ANNUM OR MORE.

TABLE OF SUBSCRIPTIONS for "A" MEMBERS.

	Yearly.	½-Yearly.	Quarterly.	Monthly.	Weekly.
	£ s. d.	£ s. d.	s. d.	s. d.	s. d.
Under 35 years of age at time of proposal,	1 6 0	0 13 0	6 6	2 2	0 6
Over 35 and under 40,	1 10 0	0 15 0	7 6	2 6	0 7*
Over 40 and under 45,	1 15 0	0 17 6	8 9	2 11	0 8*
Over 45 years of age,	2 7 6	1 3 9	11 10*	3 11*	0 11*

BENEFIT STATEMENT for "A" MEMBERS.

THE CINEMATOGRAPH TRADE PROVIDENT INSTITUTION GUARANTEES

1. **Death Payment to Member's Nominee on Death of Member,** **£20 0 0**

The following is the Scale of **Standard Benefits** to Provident Members at present authorised by the Council of the Cinematograph Trade Benevolent Fund dependent upon the merits of each application and subject to alteration by the Council at discretion.

†2. **Unemployment,** ... Up to Half Salary for 4 weeks. (Maximum Benefit, **£3** per week) and the use of the Benevolent Fund Employment Bureau.

†3. **Sickness of Dependant,*** Adult up to **20 -** per week for 4 weeks.
Child up to **10 -** per week for 4 weeks.

4. **Death of Dependant,*** Adult maximum, **£5.**
Child maximum, **£2.**

5. **Maternity,** ... ... **£3** to **£4**, according to circumstances.

6. **Loans** (under distress headings). Free of Interest up to **£100** on approved security.

TABLE OF SUBSCRIPTIONS for "B" MEMBERS.

	Yearly.	Half-Yearly.	Quarterly.
	£ s. d.	£ s. d.	£ s. d.
Under 35 years of age at time of proposal, ...	5 4 0	2 12 0	1 6 0
Over 35 and under 40, ...	6 0 0	3 0 0	1 10 0
Over 40 and under 45, ...	7 0 0	3 10 0	1 15 0
Over 45 years of age, ...	9 10 0	4 15 0	2 7 6

BENEFIT STATEMENT for "B" MEMBERS.

THE CINEMATOGRAPH TRADE PROVIDENT INSTITUTION GUARANTEES

1. **Death Payment to Member's Nominee on Death of Member,** with 1/- per head death levy from "B" members, **£80 0 0**

The following is the Scale of **Standard Benefits** to Provident Members at present authorised by the Council of the Benevolent Fund dependent upon the merits of each application and subject to alteration by the Council at discretion.

†2. **Unemployment,** ... Up to Half Salary for 4 weeks (Maximum Benefit, **£5** per week) and use of the Benevolent Fund Employment Bureau.

3. **Sickness of Member,** ... If sickness is of longer duration than 10 days and less than 17 days payment of one-half the General Practitioner's Account and an allowance of **£2** to cover incidentals. In cases of serious illnesses involving financial loss to member, a weekly payment not exceeding **£4** per week for one month or such extended period as the Council may decide and payment of one-half of the General Practitioner's Account.

†4. **Sickness of Dependant,*** Adult up to **20 -** per week for 4 weeks and payment of one-half of the General Practitioner's Account.
Child up to **10 -** per week for 4 weeks and payment of one-half of the General Practitioner's Account.

5. **Death of Dependant*** Adult: Maximum, **£10.**
Child: Maximum, **£5.**

6. **Maternity,** ... ... **£5** to **£7**, according to circumstances.

7. **Loans,** ... ... (under distress headings) Free of Interest up to **£100** on approved security.

(*Continued on page* 20)

Cinematograph Trade Provident Institution

(*Continued from page* 19)

Qualifying Period.

The qualifying period of membership is one year. This qualifying period is based on a time period and not on a year's cash subscription. If a member wishes to leave the Trade, he or she can continue to pay subscriptions and have the same rights as a member who remains in the Industry.

It will be seen at once that membership to the Provident Institution carries with it benefits that, in certain circumstances, are of very real value.

The Institution and the Benevolent Fund are two separate and distinct organisations. Subscriptions paid by members are used solely for their benefits and are only available for members. On the other hand, the monies of the Benevolent Fund are, in many cases, used to pay the Standard Benefit Payments to members of the Institution.

Subscriptions are payable for a period of twenty years, when the member then automatically becomes a Life Member of the Institution and ceases paying subscriptions.

It is difficult in these few notes to explain fully all the details relative to membership. There are sure to be points on which prospective members desire further information. Any Trade employee can obtain any further information desired by writing to the Secretary, Cinematograph Trade Provident Institution, 52 Shaftesbury Avenue, London, W.1.

DEPARTMENTAL MEETINGS

of all Technicians throughout the Industry have been arranged as under:—

Camera, ...	Friday, May 3rd.
Editing and Cutting,	Wednesday, May 8th.
Art, ...	Friday, May 10th.
Sound, ...	Tuesday, May 14th.
Still, ...	Friday, May 17th.
Floor and Production,	Monday, May 20th.
Scenario, ...	Tuesday, May 21st.
Television, ...	Wednesday, May 22nd.
Laboratory, ...	Friday, May 24th.

All Meetings to be held at

24-28 New Oxford Street, London, W.C.1, at 9 p.m.

ALL Technicians—Members and Non-Members of A.C.T.—Welcome.

Further details from Studio Secretaries or Secy., A.C.T., 30 Piccadilly Mansions, 17 Shaftesbury Avenue, London, W.1.

'Phone—Gerrard 2366.

The Journal of the Association of Cine-Technicians

SUGGESTIONS AND CONTRIBUTIONS welcomed from all Cine-Technicians.

NUMBER TWO will be published 1st August, 1935.

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London, W.1.

The Association of Cine-Technicians

Annual General Meeting

MONDAY, May 27th, 1935

Poland Rehearsal Rooms

49 Poland Street, W.1

9 p.m.

All Members should be present

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Cinematographer

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FILM companies requiring TECHNICIANS for PERMANENT or TEMPORARY ENGAGEMENT should communicate with SECRETARY, The Association of Cine-Technicians, 30 Piccadilly Mansions, 17 Shaftesbury Avenue, London, W.1

Telephone GERRARD 2366

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THE JOURNAL OF THE ASSOCIATION OF CINE-TECHNICIANS

number 2

THE JOURNAL OF THE ASSOCIATION OF CINE-TECHNICIANS

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Television

Its Technique and Future

Foreword

By Captain A. G. D. WEST, M.A., B.Sc.

As television is now definitely leaving the experimental stage and entering the commercial stage, I recommend all technicians engaged in the cinema and radio industries to obtain knowledge of the principles employed, and if possible some practical experience.

In spite of much opposition by the radio industry, television for the home is going to come very suddenly, in fact before the end of this year. There has been much pressure behind its exploitation in this form, and the time has come when resistance to this pressure has had to give way. A little foresight, however, indicates that television for the home will add, eventually, very considerably to the revenue of the radio manufacturing companies and will revive what at the moment appears to be a saturation point in the marketing of radio broadcasting receivers.

The position is rather different in the case of television and the cinema industry, because policy and technical progress are more or less in the hands of the trade itself to use to their best advantage, in a straightforward rational manner so that it will emerge as an extension or development of present cinema methods, technique and commercial presentation.

In either case, whether television is for the home or for the cinema, it must proceed, at any rate at the transmitting end, along lines familiar rather to the cinema studio technician than to the broadcasting engineer. The former, of course, studies both picture and sound, both in production and in the results achieved, whereas the latter considers sound only, without any reference to the visual effect. When television comes into the home, it will be found that although both will be necessary, the picture is the more important of the two.

Therefore there should be good opportunities for all those who have had experience of television technique, whether it be in organising the production, taking the picture, processing it and editing it, or dealing with the necessary sound that goes with it. At the receiving or projection end, the projectionist with his previous experience should do well when it comes to equipping and maintaining television on the full-size screen in the cinema.

Another point that must be remembered is that television takes its men from all scientific and technical callings; it needs the physicist, the chemist, the optician, the photographic expert, mechanical and electrical engineers, the vacuum worker and the radio engineer. They all contribute to the present art of television, but in spite of what has been achieved, there is still much day and night work to be done to continue the rate of progress which has recently been effected.

When asked to advise how best to obtain television experience, it has been rather difficult to reply, because the development work is located in only one or two centres. On the other hand, much can be picked up from reading, if it is of the right sort. Technical magazines, and in particular a recent weekly series on television, provide much material which is of value in getting an insight into modern theory and practice. A

A Composite Article by

Capt. A. G. D. WEST, M.A., B.Sc.

Technical Director, Baird Television Ltd.;

Formerly Assistant Chief Engineer, British Broadcasting Corporation;

Late of H.M.V., A.T.P. Studios, etc.

J. D. PERCY

Engineer-in-charge, Film Scanning Transmitters, Baird Television Ltd.

ALAN LAWSON

Cameraman, Baird Television Ltd.

Late of A.T.P. Studios, Stoll Studios, etc.

the same time the art is developing so extremely rapidly that methods are changed and improvements effected even within the space of a month or so.

The Crystal Palace studios of Baird Television are the only fully-equipped studios in the world to deal with this subject in all its aspects. Indoor and outdoor scenes and talking films are all transmitted, and received on home receivers with excellent results throughout the Greater London area. The entertainment value is ample for the home ; it remains now to make as much progress as possible from the manufacturing and commercial point of view. In the case of the cinema the studios are also used for transmitting scenes for projection on to the full-sized screen. Results so far achieved can be said to be definitely better than the cinematograph pictures thrown on the screens of cinemas twenty years ago.

It is only a matter of time and hard work before television pictures of news items and national events will be transmitted from some distance away and projected on to the screens of cinemas, with all the definition, tone, quality and freedom from flicker characteristic of present-day projection of the best films.

The Spotlight Transmitter

By J. D. Percy

The popularity of the spotlight method of scanning is undoubtedly well deserved, for probably no other method is so straightforward, and, while with this system of scanning the transmitter is limited in its application, it is, nevertheless, capable of producing within those limitations results second to no other system.

In case the theory of the spotlight scanner is not yet known to the reader, a short résumé of the function of this method of transmission may be of help.

Briefly, in a spotlight system the subject is placed in front of a mechanism which causes an intense spot of light to traverse his features in consecutive strips.

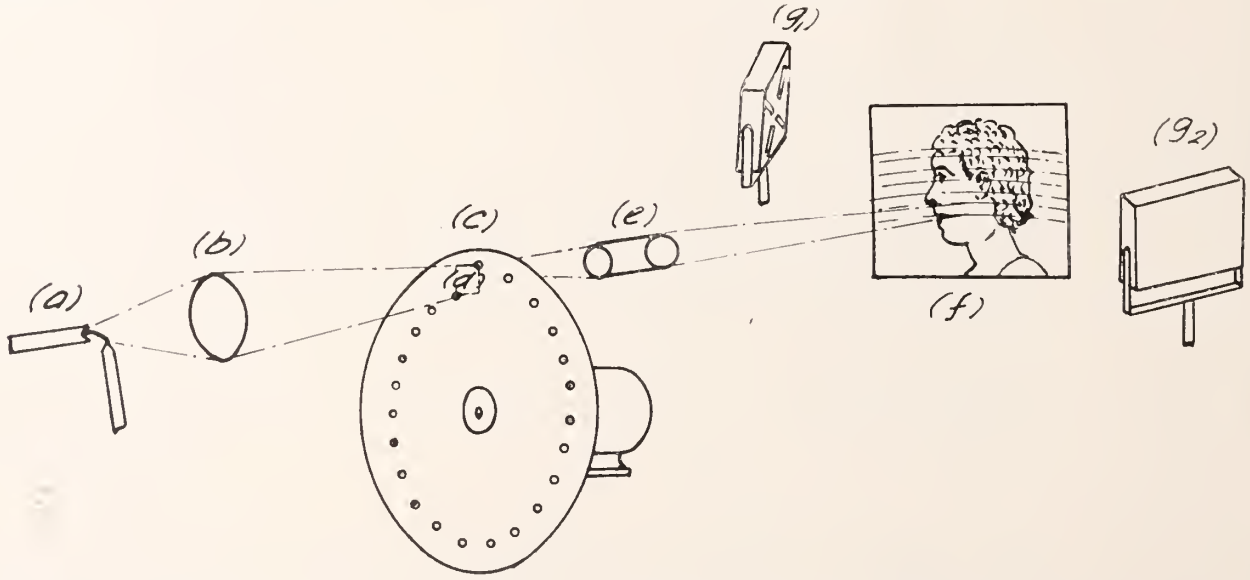
Taking a typical process, step by step, the spot would first of all cross from left to right at the highest point on the subject it is desired to transmit, say about two inches above his head.

As this first spot moves off, having crossed the complete picture, another appears at the left and repeats the process, just lapping below the path taken by the previous spot.

This goes on until the whole picture has been traversed, the number of spots into which the field is divided depending of course upon the number of lines it is desired to transmit.

The whole picture is covered by the flying spot from twelve-and-a-half to twenty-five times per second, depending upon the amount of flicker which is permissible.

To go a step further, the light reflected off the subject at any instant depends upon whether the spot is traversing a bright or dark portion. This varying reflected light is then, of course, picked up by the photo cells, amplified, and sent to the receiver by any pre-determined method as an electrical waveform, which is utilised to modulate the receiving apparatus.



a light source.
b. condenser lens.
c. scanning disc.
d. scanning area.
e. projection lens.
f subject.
9₁. photo cell banks.
9₂.

GENERAL ARRANGEMENT OF PRINCIPLE COMPONENTS IN DISC SPOTLIGHT SCANNING SYSTEM.

Considering a simple assembly of apparatus constituting a typical spotlight layout, we have a light source, light from which is concentrated on to the scanning area of a disc as per diagram. This disc has a spiral of apertures arranged around its periphery, each aperture representing a spot or line. A projection lens then focuses an image of each brightly illuminated aperture, as it passes the light source, on to the subject. The number and size of the apertures depend, of course, upon the number of lines into which it is desired to divide the picture, and this, in turn, depends upon the degree of definition desired and the degree of perfection of which the transmission channel to be used is capable.

Mirror drums may also be utilised instead of discs to provide the movement of the lightspot. Each mirror is given a slightly increased angular cant to its predecessor to enable each spot to just lap below the track of the previous spot.

Telecine Transmitter

By J. D. Percy

THE transmission of film forms one of the most convenient methods of maintaining a continuous television programme.

The necessary mechanism is small and compact and cheap to operate. Basically it consists of a light source, generally a 25-30 amp. arc, which, with the necessary optical system, provides a brilliant illumination on the film gate.

The film is driven past the gate at a continuous speed, not intermittently, and a projection lens then focuses a small image of the picture on to the scanning disc.

This disc differs from the type used for a spotlight transmitter in one main essential. Instead of the apertures being arranged in the form of a spiral, each one is the same distance from the centre of the disc.

The reason for this is that whereas a fixed scene, remaining in the same vertical plane, requires each spot of light to be just below its predecessor, to avoid repeating the scan over just one strip of the picture, a continually moving film provides this vertical movement automatically. It will be understood that as the film is actually moving downwards all the time and the disc operates continuously in a horizontal plane, the actual scan will be slightly diagonal.

BAIRD TELEVISION LTD. CRYSTAL PALACE.

Telecine Apparatus for the Transmission of Talking Films. (240 lines definition).

In practice, however, the vertical movement being so small in relation to the horizontal speed of the scanning apertures, this effect is found to be negligible.

As any aperture moves across the projected image of the film the amount of light passed through that aperture varies naturally with the density of the film.

The photo cell which is arranged behind the disc, therefore, receives a varying light flux, as each aperture travels across the film. This, of course, in the usual way sets up variations in the electron stream of the cell, these variations being amplified and passed by wire or wireless to the receiving end.

This system is, of course, applicable to any number of lines. With a suitable disc a low definition 30-line picture may be transmitted, or by substituting another disc and driving motor a 240-line picture may be produced.

It is usual, if using 100 lines or over, to arrange for the number of disc apertures to be half the number of lines it is desired to transmit and to revolve the disc twice per picture frame.

Thus, instead of using a large disc with, say 100 apertures, running at 1500 r.p.m., the same effect may be obtained by using a small disc containing 50 apertures and running at 3000 r.p.m.

By the time the fiftieth aperture has passed the downward moving film, only half the picture has been covered and the disc has completed one revolution. Number one aperture then scans again and the same fifty repeat over the bottom half of the picture.

BAIRD TELEVISION LTD.
17·5 mm. Film Picture and Sound Track for Process.
Time 30 sec. overall.

Immediate Film Transmitter

By Alan Lawson

One of the most practical ways in which fully-extended stage or outdoor shots may be transmitted is the intermediate film process.

This, fundamentally, is the same as a standard film transmitter, as far as the television section goes.

BAIRD TELEVISION LTD. CRYSTAL PALACE.
Transmitting a Spanish Scene from No. 1 Studio. (240 lines definition).

Instead, however, of the gate being fed by film, which has been taken and processed separately, it is fed instead with film which comes continuously from a camera which is actually photographing the scene it is desired to televise. Interposed between the camera and the scanning gate are a series of tanks, through which the film passes, undergoing development, fixation and washing.

The overall time between the actual moment the film leaves the camera gate to its entrance into the scanning gate varies according to the amount of development time and fixation time required by the type of film stock in use.

In Germany it is usual to allow nearly one and a half minutes' delay. In England the standard delay time is just 40 seconds.

Sound is recorded in the usual way and taken off after the film has passed the scanning gate, being timed, of course, to synchronise with the picture.

The photographic side of the intermediate film process is, in practice, very similar to normal studio cinematography.

Processing.—We use a soft working panchromatic stock, of fairly high speed (about 15% slower than the S.S. panchromatic used in studios). The time occupied in processing of necessity must be reduced to an absolute minimum; development takes 5 seconds and fixation 10 seconds and the whole process is completed within 30 seconds, this including thorough hardening, washing and scanning.

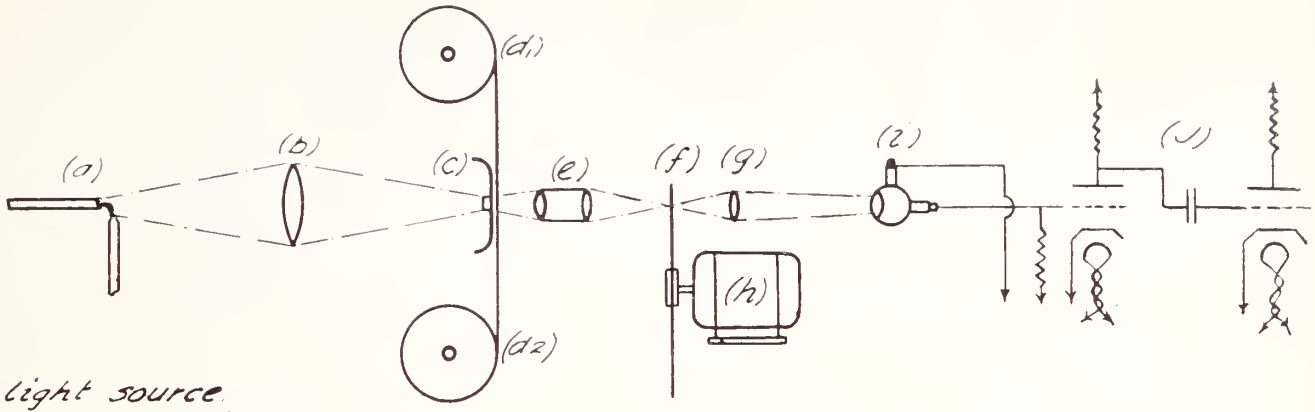
Studio.—In the studio we use about 10% more light than that used in film studios. The principles of lighting are the same, only more care has to be taken with the choice and lighting of backgrounds, especially for close-ups—*e.g.*, a blonde needs a fairly light background, etc.

The standard of lighting is rather exacting, inasmuch as long shots and close-ups have to be done with the same lighting. This is on account of the scene being taken and transmitted right through without any breaks for moving the camera in for close-ups. Any close-ups that are required are done by changing the lens.

A negative of fairly good quality can be got by this method, but only with careful rehearsals and rehearsals on actual film.

By this I do not intend to imply that one can get as good close-ups or long shots by this method as by lighting separately for each shot.

Exteriors.—There is no departure from normal work on exteriors. We use filters and the same stops as used on S.S. panchromatic stock.



a. light source
b. condenser lens.
c. film gate
d1, d2. } film spools
e projector lens
f. scanning disc.
g. condenser lens.
h. driving motor.
i. photo cell
J. 'a' amplifier

SIMPLIFIED SCHEMATIC DIAGRAM.
—OF—
FILM TELEVISION TRANSMITTER.

Make-up.—Make-up for this process is one shade darker than that set down by the manufacturer, *e.g.*, blonde women use 27 instead of 26, etc. Lining colour, lip rouge, etc., are put on slightly heavier than for film work. The results on the receiver are most pleasing to the eye and compare favourably with the cinema screen.

Normally, if you have a leading lady whose face calls for a little "aid," you use a diffusing screen or a "blanket." In this process you do not need any of these, as the cathode ray tube does all the beautifying one could wish for. I do not mean by this that all shots are diffused and woolly. Far from it—long shots and medium shots are clean cut, with a very slight gauzed effect.

There is no doubt that within two or three years the technique of this process will be on par with that of the films.

Conclusion

By J. D. Percy

HAVING considered the various forms of television studio operation in use up to the present day, let us now go a little further, and try to visualise the lines along which studio development will run.

It is already a far call from the first spotlight studio, with the scanning beam coming through a small window from the control room, scanning a single face, to the modern intermediate film studio with its sets and scenery and stage.

Yet, if the present pace of technical improvement is maintained, it is safe to prophesy that another two years will see the most lavish forms of entertainment brought to countless firesides by ultra short-wave radio.

The television studio of the future will undoubtedly follow more closely the technique of the film studio of to-day, rather than the broadcast studio. So closely in fact do the requirements of film-making tally with those of television broadcasting, that portable television transmitters could be arranged to operate turn about with the cameras in existing studios, without alterations of any kind to the studio arrangements or organisation.

No matter how perfect the transmission of the fully-extended or "stage" scene becomes, however, there will always be an important part played by the close-up scan of individual artistes. And, whilst both the electron

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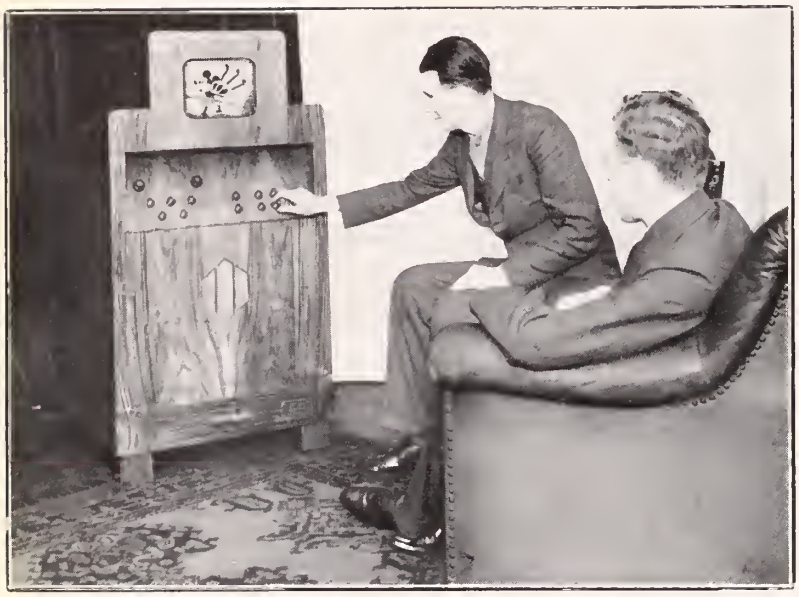
Miss ALMA TAYLOR giving Hairdressing Hints and Hat Fashions before the Spotlight Transmitter. (240 lines definition).



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The Baird Home Receiver giving a bright Black and White Picture, 8″ × 6″.

camera, and the intermediate film scanner, can, in a moment, be adapted for either long distance or close-up shooting, the high definition spotlight transmitter will undoubtedly find its place in the scheme of things for some time yet to come. The simplicity of this form of transmitter, coupled with its complete reliability and ease of operation, outweigh its limitations as to subject matter and entertainment value.

Certainly for the broadcasting of talks, appeals, song recitals, and similar items, the spotlight system is still unrivalled.

It is, of course, too early to prophesy whether the public will be satisfied with the transmission of films, or whether it will demand a continuous programme of actual events taking place while they watch. Certainly during the first decade of high definition television broadcasting the transmission of films will undoubtedly form the major part of the daily programme.

This will be due, not so much to the fact that the transmission of stage scenes still presents a certain amount of difficulty, as to the fact that the organisation to run a "direct pick-up" programme must, of necessity, take a certain amount of time before it functions smoothly, while films are in themselves ready-made programmes and possess the advantage of being repeatable at intervals if desired.

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Thorold Dickinson

A Cutter in the Clouds

"CUTTING" is an awkward term for putting a film together. "Jointing" is a better description. The two-dimensional moving image of a film is given an illusion of a third dimension partly by lighting and composition within the shot, partly in the relation of camera angles from shot to shot, and partly by the choice of the joining point or *joint* between shot and shot. These joints are only of value to a film if they appear effortless and inevitable, and if dramatically they give point to the telling of the story. This dual purpose of the joint is too often neglected by the fledgling editor, who tries to kid the spectator by aiming at visually smooth jointing and neglecting to give the joints any emotional—*i.e.*, dramatic—significance at all.

The cult of smoothness for smoothness's sake is selfish and cowardly, particularly as its use can only be immediately detected by the expert, and comparatively few production units possess such a technician, apart from the editor.

In our haphazard industry, where technicians and critics alike receive only spasmodic guidance during their years of so-called training, harmful work of this sort has persisted over long. Too many of our films reach the screen in an ill-digested shape, and a well-known critic is apparently justified in repeating in the previous number of this *Journal* the widely-held idea that British film editors often fail in their job.

To progress beyond the visual purpose of the joint towards its dramatic purpose is normally a most stimulating experience. One finds one can break all the rules of matching and cutting on movement and thereby improve on their conventional effect. In fact, this theory of cutting on movement turns out to be a fallacy. Cutting in anticipation of facts—and most facts on the screen involve movement—provides a more effective joint. The point lies in the analysis of movement. Study of the technique of the ballet will provide a valuable parallel experience. A dancer is first trained in certain conventional movements or gestures, and a simple dance is merely a chosen succession of these movements carried out without pauses between the various gestures. A ballet in all its amazing complexity is actually a series of such "successions," chosen and invented by the choreographer. It is a matter of doing one thing at a time with a series of effortless joints between each "thing." An efficiently jointed film can always be spotted by analysing each shot and finding out if each one begins with a new idea, no matter how seemingly unimportant—whether movement, gesture or physical reaction—and finishes with at least a hint of the completion of that idea. Naturally a rule like this demands much experienced understanding in practice, particularly in those sound films which dare to relate sound and picture in harmony, discord or contrast rather than in unison.

THOROLD DICKINSON.

Just as jointing has a dual purpose, so also has editing. Besides arranging a nice juxtaposition of shot to shot, the editor has the task of shaping the overall form of the film. This has been done theoretically—if possible with the editor's collaboration—in the script. But in practice the problems that remain when the production is finished can be staggering. To edit films efficiently takes all the nerve, power of concentration and courage that a man possesses. There is nothing between the editor's work and the hard-hearted mass reaction of the theatre audiences.

Judgment, restraint, diplomacy are the essential qualities of the editor in his special tasks of balancing performances which differ from the script's intention—providing a buffer between the producer and the director and of the director often too close to his work to be able to judge it detachedly. Sometimes a director will renounce a pet shot, made under enormous difficulty, with such charming humility that the editor is almost persuaded, against his better judgment, to use it. Again, a producer's amateurish insistence on so-called "production value" may wreck the whole delicate balance of a sequence by forcing obviousness, where obviousness is a bore. Then there is always that last pitfall of the untrained mind—an attack of pre-trade-show jiggers. Giving way to this alarming complaint by making unnecessary cuts has led to the crippling or killing of many an adequate film.

Imperial Airways Liner "Scylla."

16th June, 1935.

A Larger "Journal"

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Cinema Log

The Colour Era.

"Becky Sharp" has done it! Yes, the Cinema industry has entered the colour era, and as in the case of the "Talkies," both the Exhibitors and Producers are floundering in deep waters in their attempt to adopt the right method of reproduction. Each approaches the subject from a different angle. Exhibitors require perfect colour, no machine attachments and no additional costs in their already heavy expenses.

The producers are looking for a process requiring the minimum of extra cost in manufacture, both from the floor and print charges, and one which is also free from heavy negative and positive manipulations, and that can be photographed with a reasonable quantity of lighting. The splendid results obtained by inhibition methods must in the long run be considered from the standpoint of rapid processing. None of these, it must be realised, could be used for news-reel production, as the time lag in the laboratory would kill the essential feature of speed of exhibition. I think it is time that we considered a modernisation of the old Kinemacolour, or Biocolour methods, which use black and white prints, with an attachment on the projecting machine to render the colour.

It is, I am sure, essential while experimenting with these systems, to use two negatives; one of the usual panchromatic type and the other orthochromatic, giving a good rendering into the green band of spectrum. There are many methods now in the experimental stage, which would be quite practical if this principle were adopted.

It is essential for the Colour Technician to realise the sensitivity band of modern panchromatic emulsion. He has only to gaze at a wedge to realise the impossibility of using these to cover the whole visual range of the spectrum, owing to their high red sensitivity.

The processes can be adapted by a simple lens attachment with a shuttle or rotating filter system. Also one could use dyed frames, which could be mechanically processed at a very rapid rate. I have experimented with one of these processes, but as only one frame, dyed orange-red, was used, the rest of the spectrum was obtained by "pure imagination."

I believe that the Cinecrome people are about to launch their process in a far higher technical form. We await the viewing and further details of their process.

The Biocolour system, which was Kinemacolour, with the frames dyed to act as their own filters, was killed, not by its technical imperfections, but by the litigation that killed its competitor—Kinemacolour. I worked on this process in Brighton, the then technical home of the cinema, with that creator of the modern moving picture, Friese-Greene, who first imbued me, so many years ago, with a colour complex.

Another black-and white colour process is being manufactured in France, using a three-lens combination which can be easily adapted to the ordinary machine. This gives very good colour rendering, but the highly skilled optical manipulation is at the moment, I believe, holding up its commercialisation.

Glorious Quality.

Talking of the late Friese-Greene, I hear, since his son Claude's recovery from his serious illness and return to the B.I.P. Elstree floor, his camera work in their latest production is something that cameramen dream about. Claude and I worked together in our early youth, under the technical guidance of his father, and I am sure that when the Associated British Corporation adopt colour for their features, the work of this camera ace will be the talk of the world. He did, a few years ago, bring out a process himself, but it was in the days when the Cinema industry was suffering from the financial set-back, from which it has now so ably recovered, that I am sure it did not get the chances that it deserved. Perhaps Claude will resurrect his idea.

Promotion.

Congratulations to my brother Vice-President, Thorold Dickinson, of A.T.P., on his promotion to the rank of Associate Producer. Thorold is a very deep thinker, and has a personality that has a soothing influence on everybody with whom he comes in touch. At the same time, his active brain is obtaining a clear and concise, and what is more, unbiased, idea of the subject that he is discussing. What an asset for his new position. The Association owes a great deal to the judgment of this Cinematographic enthusiast.

Return from Foreign Parts.

In the last issue we mentioned that Roy Fogwell had left with the Ward Wing unit for Singapore. Well, now they're back again, with fifteen thousand feet of negative in the "can." They tell me that there was plenty of excitement. Twenty-eight feet pythons striking at the camera for close-ups; shots of crocodiles, a fight between two water buffaloes and a baby orang-outang that was a pet of the party, but would keep stealing the camera accessories and had a perfect passion for the pan handle. All this in an average temperature of one hundred and five in the shade. And as an afterthought Roy mentioned the beautiful native girls who were the principals in the films!

I saw Ward Wing crawling down Wardour Street the other day suffering from some mysterious Eastern complaint. He was a very sick man, and yet only three months ago Ward, full of enthusiasm and fight, as fit as a fiddle, was off to make this picture for the Columbia Company. To-day, with a picture completed, bar for the cutting, he is in the hands of the Hospital for Tropical Diseases. This is just one of the sacrifices that have to be made at the altar of the "Cinema God."

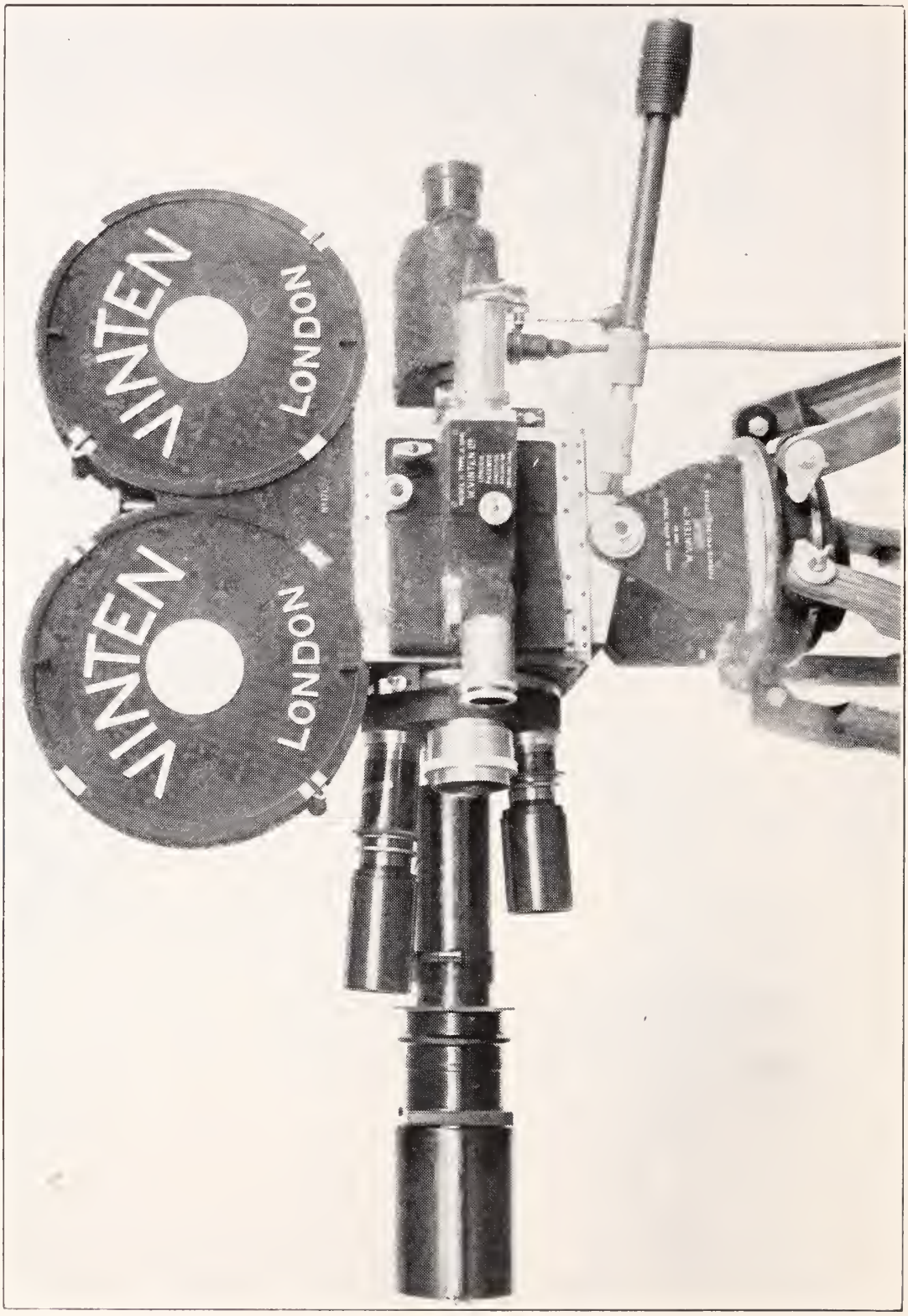
Death of Eugene Lauste.

I am sorry to hear of the passing of Eugene Lauste, the father of the "talkies," who obtained the first British patent for a sound film thirty years ago. Born in Paris, Lauste held 53 French patents at the age of 23, and after coming to England he lead the band of Anglo-French cinematograph experimenters. His son, Emile, is known to English technicians as the technical liason officer of the Kodak Company in connection with their cinematograph department.

To Stand for Parliament.

A.C.T. has been fortunate in its contacts with members of the House of Commons, and members will be pleased to hear that the Association's Secretary, George H. Elvin, has accepted an invitation to stand at the next election. The General Council readily promised the necessary leave of absence for this purpose, and I am sure that we all wish him success at Weston-super-Mare, the constituency for which he has been adopted.

KENNETH GORDON.



PROGRESS MAINTAINED

SEE PAGE 40.

Music for Sound Tracts

By Leo T. Croke

I AM in the happy, or unhappy, position of being a free-lance composer and recorder of music for sound films.

Unhappy, in having to be my own business and sales manager, accountant and, occasionally—though not too often—my own debt collector.

Happy, in not being tied to any particular studio, thereby gaining useful experience in recording and being able to see some of our leading sound engineers and technicians at work, many of whom have done so much to put sound film recording "on the map" in this country.

Further, I frequently visit the cinema for entertainment, and it certainly is instructive to compare the various sound tracks under working conditions.

Comparing our tracks with those of Hollywood leads me to the conclusion that a great deal of our music is under-recorded. There are notable exceptions coming from our bigger studios, but the above fact must be patent to anyone with a sense of orchestral balance. This fault is particularly evident in vocal music, for which the orchestra is so often practically faded out. An audience attending an orchestral performance in a concert hall can appreciate all the variations of light and shade, and yet if the same work is recorded on a sound track the peak of each climax will be faded off to such an extent as to rob the composer of his original intentions. I am forced to conclude that an orchestral climax is considered almost indecorous on the films.

Nothing will convince me that our systems in this country are incapable of giving us the breadth of dynamic power which we get from the other side. I have heard a few British tracks that have achieved equal results on both density and variable area. My grumble is that we don't get enough.

We certainly have orchestral players equal to any in America or on the Continent, and happily they are losing much of their very understandable hostility to sound films.

Sound engineers have very little time in which to place and balance the orchestra and every band has its own particular ensemble. Moreover, a very slight change in the personnel of a regular studio orchestra may necessitate rebalancing. Considering the speed at which the work has to be produced, our technicians show great skill in getting through their job with such speed.

How many studios allow their technical staff a decent-sized band for occasional experimental purposes only? A week, or even a couple of days, from time to time, would be well worth while.

At the other extreme, I have seen the personnel of a band completely changed during the recording of a film. The second group of players, never having played together before, had neither balance or ensemble. Yet the recording went merrily on! To start recording under these circumstances is grossly unjust, both to the engineers and musicians. Needless to say, the film was a failure.

Experience in various studios working in variable area, density, and latterly making tracks for colour films, as well as cartoons, has taught me that there is much to be gained by recording in short lengths wherever possible. It saves time in re-takes and is not such a strain on the musicians.

The following are a few time-saving hints, some of which are known, but not always put into practice :—

(1) A complete score of the music to be recorded should be prepared for the technician on "controls" and should be sent to the studio a day or two in advance of the session.

(2) As he has a number of things to attend to besides following the score, the dynamics should be marked in coloured pencil, taking care to start the crescendos and diminuendos at the exact place, and not approximately, as one occasionally sees.

(3) When the session includes vocal items, particularly harmonised work, the vocalists should receive copies well in advance and have a rehearsal beforehand, at which it is essential they be word and note perfect. A singer coming into a recording session and relying upon reading the part from score, particularly if a bad sight-reader, may run recording into an extra day's session that has not been budgeted for.

(4) All band parts should be checked for copyists' errors before the session. Much valuable time is wasted by doing this in the studio.

Sound Engineers will agree that no amount of careful recording, even with a first-class band, can produce good results if the band parts are badly arranged. If the Musical Director cannot score all the music himself—and no man should presume to direct an orchestra until he has mastered the intricacies of orchestration—he should make sure that the scoring is done by an arranger who knows something about film recording. There is a definite technique in scoring for a sound track, particularly in the lay-out of the inner parts and the distribution of intervals of chords of the 9th, 11th and 13th, as well as modern chromatic harmonies. Just as the Common Scale of 'C' can be made to sound majestic if harmonised and scored by a skilful arranger, equally so can the finest melody be made commonplace and robbed of its beauty by an inferior or slovenly orchestrator.

The system of farming-out band parts is also thoroughly bad. A score that is given to a five-guinea man may be passed on to a three-guinea man, who again passes it on to another, till it finally reaches some poor hack who does the actual work for a guinea or even less. This system has become possible through the lack of encouragement generally shewn to the best arrangers. Our orchestrators are as clever as any in America and are worthy of encouragement, for they are not the least important link in the chain that produces a good sound track.

British Kinematograph Society

Forthcoming Lectures

WE should like to remind members that they are invited to attend the lectures of the British Kinematograph Society and invitation cards may be obtained a week or so prior to each lecture from the Secretary of A.C.T. or Studio Secretaries.

The 1935-36 programme is still in the course of arrangement, but it is hoped to commence the session with a paper dealing with "Spicer-Dufay System of Colour Cinematography," probably followed by a paper by Mr. Louis Levy, with demonstrations on the subject of "Fitting Music to Films." Another interesting and entirely new type of lecture to be given will be one by Mr. Gillespie Williams, of the Holophane Company, on "Colour Lighting for Cinematography."

Sound Man on Location

Alex. Fisher

THE recent increase of foreign location films is due to the desire to give the Motion Picture public something unusual, something which could not be faithfully reproduced within the four walls of a studio or on location in Britain. The touch of reality in "Sanders of the River" and "Lives of a Bengal Lancer," for example, in which this method was used, helped considerably to establish their box-office success.

Outsiders often look on these trips abroad as pleasure cruises and some companies have even tried to impress this on their crews. This is generally far from the case, and my experiences in the Far and Near East, and Africa, have convinced me that very few persons understand, or wish to understand, the many problems that confront a Sound Man on Location.

Vedahs outside the "Studio."

Conditions are rarely ideal and for months one may have to shoot without hearing any "rushes," being dependent entirely on one's gear or vague reports from the Laboratory, which generally arrive months after recording. If one is fortunate enough to get a local theatre, the local installations are generally unreliable, the level usually varying anything from 10 to 20 D.B.'s, and the machines suffer from hereditary flatter and much noise. Home critics have vague ideas of native music or chanting, and their suggestions are often not even helpful. Let alone are they capable of being carried out.

Over a thousand excited native warriors engaged in a war dance may, or may not, appear a difficult proposition to record. In practice, however, anything may happen. They may strike at the "mike" in their excitement, let forth explosive sounds or descend to inaudible mutterings. In "Sanders of the River" the "mike" tripod was knocked over frequently, and on occasions the mixer table, myself included, was sent flying. Under these conditions, the Sound Man's reactions must be "A.1." in order to record anything like satisfactory results and he must be able to decide in a flash whether he is likely to get anything worth while, even in the midst of the surging mass of excited humanity.

Anyone with a knowledge of the East or Africa has sufficient knowledge of fever, reptiles, vile climate and other discomforts to be cognisant of these additional handicaps to good work.

When recording some Vedahs, the most primitive natives of Ceylon, they refused to part with their weapons, and sang in front of the microphone waving their battle axes. They could not speak English or Singalese, and there was no interpreter available to ask them to sing up or tone down. Handling native artists is often more troublesome than

A production shot of B.I.P.'s "THE DUBARRY," with Gitta Alpar, the famou Hungarian gipsy soprano, in the title role.
(Photograph by courtesy of British International Pictures).

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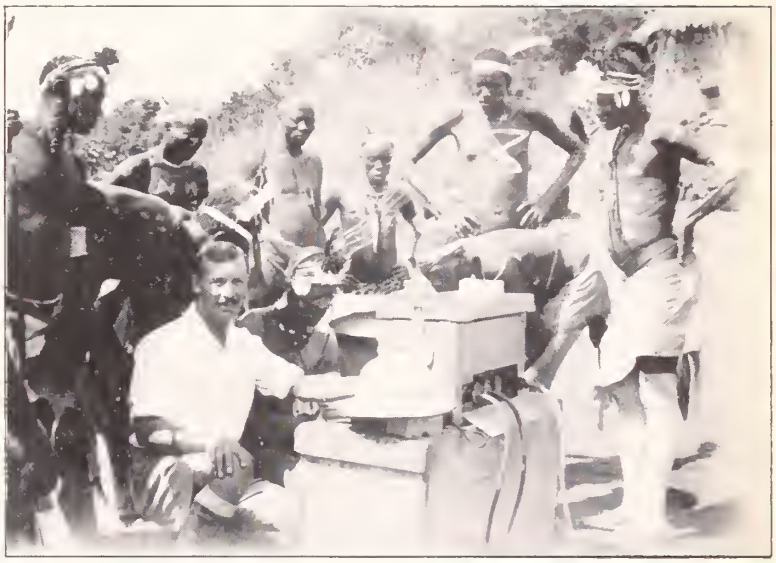
dealing with a temperamental star at home. They have their own fixed ideas as to how things should be done and no power on earth can alter them.

Sound Men abroad should be prepared to record anything from Giant Gongs, such as used in the Javanese Gamelon and whose harmonics are of very low frequency, ranging below 50 cycles, but which at a slight touch produce sufficient volume to fill the Albert Hall, to a Chinese Fiddle, whose top note runs into harmonics of over 9000 cycles and whose volume at that is very small. A combination of these two instruments is frequently found in the Far East.

In Madagascar there is an instrument which is made out of one piece of bamboo, strings included, and a collection of which produce an effect reminiscent of an annual gathering of grasshoppers. The orchestra is augmented by tambours, a type of bass drum, considered indispensable by the natives, which is beaten by hands and generally completely drowns the rest of the band.

Locali drums of the Belgian Congo produce another difficulty for the Sound Man. The really big ones are six to eight feet in length, with as big a circumference, and on being hit with a crude rubber-covered stick, produce a tremendous volume. The frequency is again of very low harmonics, and a lot of trouble is necessary before anything like real sound can be recorded. Locali are used to telegraph news from one village to another at an amazing speed. Frequently, Europeans possessing modern equipment get news later than the natives.



ACHOLI WARRIORS around mixer. "SANDERS OF THE RIVER."

A Fighting Scene from "SANDERS OF THE RIVER."

Some Far Eastern music is very melodious and pleasing to the European ear. Kronjong melodies of Java are fascinating and I am surprised that so little native music is heard in films supposed to have been made in the East. Kronjong melodies, with their Hawaiian and Spanish guitars and other string instruments—the music of modern Java natives—would be very popular with the Motion Picture public. The music of old Java, also, which uses instruments over three thousand years old, produces melodies which would be appreciated even by the sophisticated cinema-going public.

Indian music has been more fortunate and has been introduced in films, and well received, on several occasions. Carefully-chosen Arabian, Singalese and Javanese music would, I feel sure, have a similararly successful reception.

We travel to distant parts under the impression that our apparatus will at least impress the natives. Often this is not so. In some parts of Africa, where "civilisation" has not yet penetrated, the general opinion is that all white people are mad. They have no use for our wonderful apparatus and it is therefore valueless. A bicycle, for example, is much better received than a lot of junk called, in our language, recording gear. To travel to Africa and hope to impress natives with the recording marvels of "civilisation" will but lead to disappointment.

Confidence in A.C.T.

THE Association has continued its practice of holding meetings of technicians employed at various studios, and we are pleased to report that at a recent meeting of A.T.P. Studios Sound Technicians—who are 100% A.C.T.—a unanimous vote of confidence was passed in the Association of Cine-technicians as the only organisation competent to represent the interests of film technicians generally.

Payment for Overtime at A.T.P. Studios

As we go to press we hear that A.T.P. Studios, Ealing, have instituted payment for overtime in three departments—camera, sound and cutting—for those earning under £10 per week. Representations on certain points were made by A.C.T. officers who are at the Studios and the rate was finally based on a 54-hour week, with a minimum overtime rate of one shilling per hour. The negotiations were friendly and informal, and the whole matter was settled in the shortest possible time. The result shows clearly how A.C.T. can by friendly co-operation with sympathetic studio authorities achieve ends that coercive methods have been known to miss.

We hope to publish in the next issue full details of such overtime systems as are in operation in studios.

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The News-Reel War Continues

"Use the Fleet Street Rota System," says Paul Holt, *Daily Express* Film Critic

Mr. Kenneth Gordon, who asked me to contribute to this magazine, has a genial exterior which does not belie his personality. So far as I can discover, his main interests in life are good living—and the welfare of his colleagues. I think he frequently allows the latter interest to affect the former. Considering his aptitude for enjoying the good things of this world (not forgetting a good joke, and a good glass of beer), he is to be congratulated; he certainly has plenty to worry about. It occurred to me while he was speaking to me on the subject of this magazine the other day, that the only thing I could usefully write about was the so-called "News-Reel War."

It is not a war; it's a ramp. News-reel cameramen know that they are being asked to behave more and more like comic opera bandits, and less and less like pictorial journalists.

You only have to think for a moment of an incident that occurred at this year's Grand National. There was a forty-foot tower erected outside the course to enable the "pirates" to secure pictures for the great British public without paying too much for the privilege. Now I do not mean to suggest for a moment that the gentlemen who cut the ropes securing that temporary structure, and rocked it in a laudable endeavour to spoil the apparatus and maybe the necks of the gentlemen above them, were in the wrong. Anyway, they were acting under the instructions of their masters, who felt that they were entitled to have what they had paid for.

But just imagine for one moment what would have happened if Mr. Gordon had been on that tower. That piece of light-hearted commercial rivalry might have been turned in an instant into a national disaster. I am not one of those people who refuse to believe that there was anybody rocking that tower; who insist that Mr. Gordon *was* on top of it, and hiccoughing slightly in a high wind.

But do you not see how farcical the whole affair is?

It boils down to this. There are five major news-reel companies in this country competing to get the best pictures to put on the screens. But to-day it does not seem to matter a hoot who gets the best pictures. What should be a matter of open competition has become a matter of commercial contract. The very livelihood of the news-reel cameraman is being jeopardised by the refusal of certain companies to agree to a steady rate of contract. Gaumont say in effect, "Let's all charge the same for our news-reels, and thus stop the fight." And others reply, with good logic, "If we can rent our news-reels cheaper than you, and still show a profit, why should we fall in with your plans?"

So the war will go on. The danger to the livelihood of the news-reel man will increase steadily. It is not so much a danger of life and limb; the news-reel man seems to take that as a matter of course, and I admire him for it. There is a good deal of danger in his job, but still, it is a good job. The danger is this:—

Somebody let off flares at the Grand National, and there was a serious suggestion in the Press that those flares might have interfered with the jumping of Golden Miller at that vital fence where he unseated his jockey. There were £2,000,000 of the public's money on that horse, and if it had only been proved (which it was not) that those flares had anything to do with the refusal of Golden Miller at that fence, the public would at least have been "violently prejudiced" against news-reels. They would have demanded heads on chargers—and it is the working man's head that always finds its way to the charger when a crisis comes.

I was at last year's Test at the Oval and I spent the day with the Gaumont people, who had rights to the ground. Throughout the morning we had a very happy time chasing suspicious characters through the crowds. But we did not catch much. The gentlemen from Pathé, who passed us on their way into the grounds, raised their hats politely, knowing perfectly well that we couldn't do anything to them. I enjoyed myself enormously, and it made a good story. Eventually the situation whittled itself down to a concentrated attack upon a hole in a small circular window on the top story of a school outside the grounds. We were certain that a pirate camera had been placed behind that hole, and we were quite probably right, because I could see more than one pirate camera openly erected on the roof of the same building. Anyway we got our searchlights to work and shone them with all our might, and the natural result was that before play had been in progress for ten minutes the crowd on the other side, who were getting just as much of the glare of the searchlights as anybody else, started to barrack. Eventually the umpires stopped the game, and a solemn policeman came to tell us to put our lights out. So then we just settled down to enjoy the play ourselves.

It was great fun, but nobody seemed to realise the terrific risk we were running. Supposing for a moment that the light had been shining across the pitch when a wicket fell and the batsman had complained. There would have been the devil and all to pay.

And anyway, there does not seem to me to be very much point to it all. However hard the official news-reel teams try to prevent pirates from securing their pictures, the pirates always *do* secure them, and put up a surprisingly good show too. At the Cup Final at Wembley this Spring they had the infernal nerve to fly a plane over the stadium with a hundred-foot streamer behind, advertising a pirate reel. They said they would get the pictures, and, by Lucifer, they did!

Of course, there is only one solution to the whole problem. That is a round-table conference of the news-reel heads. And if they still cannot come to an agreement about prices, the matter should be put to arbitration. Eventually it is inevitable that all reputable news-reels should have an equal opportunity of securing the best pictures of national events. Where it is impossible for more than one reel to get in—like a ceremony in Westminster Hall for instance—news-reels should adopt the rota system used by Fleet Street photographers. In Fleet Street we take our turns to cover such jobs, and everybody gets the pictures. The same pictures, the same quality, at the same time.

That seems to me to be the only civilised way of running the business. It is particularly important now, as I am firmly convinced that the future of news-reels is immeasurable. Before you know where you are, you are going to have televised reels, and Heaven knows what, to make the news-reel cameraman's job perhaps the most important in this amazing film business.

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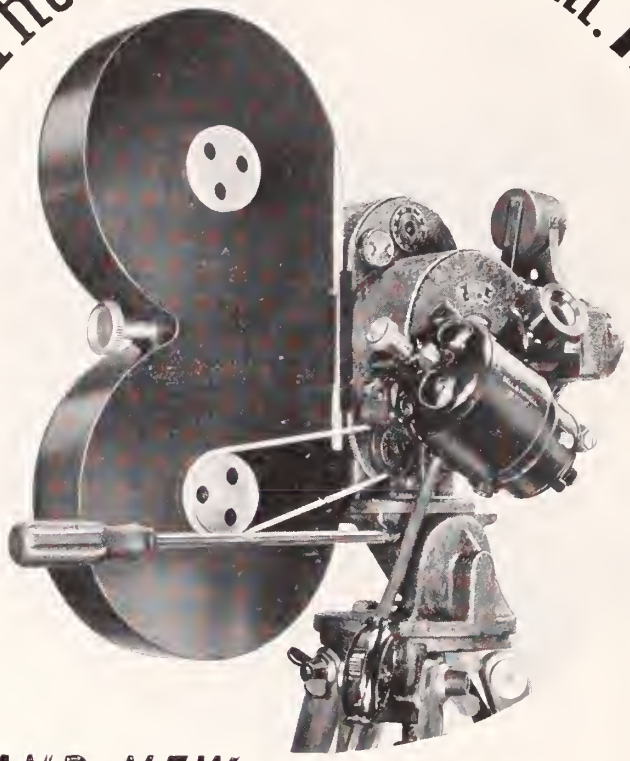

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Problems and Work of French Film Technicians

By SYDNEY COLE

While in Paris recently I saw M. Berthomieu, President of the Fédération des Artisans Français du Film, and conveyed to his Association and himself our good wishes. Our conversation brought out strikingly the complete similarity of the problems our two associations have to deal with. His is concerned, but to an even greater degree, with the admission of foreign technicians. This problem affects France more than any other country, for Paris is essentially a city of exiles and refugees, that is of expatriates who have to earn their living in their new country. The events of the last two years, for example, have filled the French studios with quite a large proportion of former German film technicians.

I suggested that it might be possible for us to arrange a quota exchange system of technicians— France admitting so many English technicians, in exchange for the same number of French admissions into England. M. Berthomieu agreed that such a scheme would be worth considering, but added that at present unemployment was too general with them to make it practicable. Such a scheme, I think, operating between all European countries, would avoid the danger of sterility I foresee in the policy of excluding all but ace technicians. The junior technicians would benefit from experience of foreign studios ; yet under the present—though, of course, necessary—policy it is the junior technicians who are completely excluded. Some form of quota exchange would remedy this, but, until that can be arranged, the policy of exclusion will probably have to continue.

M. Berthomieu was especially anxious to draw A.C.T.'s attention to the results of the recent Berlin Film Congress, reported on page 40. An International Federation, such as outlined, might do very valuable work on the problems of the admission of technicians into different countries, and in promoting the exchange of technical ideas.

Salaries were another matter of parallel concern. Our attitude is roughly that it is possible to find "natural" levels of salaries for each grade by basing them on the actual salaries paid to competent technicians by the best studios. The attitude of the French technicians had a rather different and broader basis, in that they felt themselves to be underpaid in comparison with the artistes. It would be of interest to discover whether the proportion of technicians' salaries to artistes' salaries is, on the average, smaller in France than in England.

M. Berthomieu seemed surprised when I asked what percentage of French technicians were members of his organisation. Why, he replied, there is practically no French technician who is not a member. This has been achieved by a policy of member-technicians objecting to working with non-members—in effect, a closed shop. I gained the impression though, that this was the result, not so much of organised policy, as of initiative on the part of individuals. There seems to me to be a lesson for A.C.T. members in that—to realise their membership doesn't begin and finish with paying a subscription but includes a duty, for their own sakes, of making all the technicians they work with members too.

M. Berthomieu remarked on the first number of the *Journal*, which had been sent to him. I was glad to notice he had obviously been impressed by it. We agreed that it would be a good thing to maintain a regular exchange of our bulletins and publications.

In conclusion, I was asked by M. Berthomieu to convey to A.C.T. his association's good wishes.

Employment of Technicians Abroad

We have received the following information with reference to the employment of foreign film technicians in Austria and Italy which, we feel, will be of interest to members :—

Austria.—Foreign technicians in the film industry must possess a labour permit, which is to be obtained by the employer according to the provisions of the law of 19th December, 1925, B.G.Bl.Nr.457. These permits are granted by the Wanderungsamt of the Bundeskanzleramt, after the state of employment in the film industry has been taken into consideration. The request for such a permit must be made by the prospective employer to the competent Landes-Arbeits-Amt.

There is no limitation to the employment of foreign camera technicians in the sense of a film quota or contingent. A film producer who claims any subsidy from the Ministry of Commerce must, however, employ a minimum nember of Austrian citizens as technicians according to the scale laid down by the Ministry of Commerce ; this varies from 11 Austrian technicians for a full-length film, to 5 Austrian technicians for a short film. The conditions for recognition of a film as an Austrian film entitled to subsidy do not exclude the employment of foreign technicians.

Italy.—The admission into Italy of foreigners who desire to take up residence and obtain employment is subject to permission being granted by the Ministry of the Interior. Permits are issued at the request of the applicant, after due examination by the provincial authorities (Prefects), in conjunction with the other competent organs (Corporative Inspectorates) of the local labour situation, with particular reference to unemployment, and after consulting the permanent consultative committee for the admission into Italy of foreigners seeking work.

In practice, we are informed, permits are more easily obtainable for the temporary employment of foreigners for periods up to six months. These permits can, as a rule, be extended for an indefinite number of further six-monthly periods, provided the employer can put a strong case for the retention of the services of the foreigner in question.

£1000 FOR WIDOW OF LATE A.C.T. MEMBER.

As a result of an action at Common Law, we are pleased to report that a widow of a late member, who was fatally injured in the course of his work, has been awarded £1000 compensation with costs.

We are pleased to have been instrumental in rendering this service to a dependant of one of our members. It should impress upon all technicians the necessity of belonging to an organisation which will safeguard their interests.

Cine Perfection Demands Purity in Chemicals

By John J. Curtis

It is somewhat surprising to those who are connected with the supply of chemicals how very often they are confronted with carelessness or indifference on the part of laboratory technicians.

A manufacturer of chemicals knows full well that if he is to obtain the pure form of any particular product, he must use only pure ingredients. The presence of any impurity is fairly certain to upset his calulations and most probably the result will differ from the specification. If this is a rule attending the manufacture, it would appear to be only right or logical to apply the same to the use of the chemicals in the laboratory.

In cine work, many of the chemicals used belong to the group termed "fine chemicals," and the very nature of their work demands a high state of purity, and it is interesting to recount what work these have to perform. The emulsion of the films contains a silver salt in the form of silver halides, which, on exposure, are acted upon by light ; as soon as the developing solution reaches these a very delicate reaction occurs, converting the halides into metallic silver ; this is purely a chemical change—at first it is a solution change—and then precipitation takes place, forming thereby an image with varying densities according to the light action. So much for developing. Now consider the second important work in connection with the production of a finished cine film, namely, Fixing ; there are still some silver halides left in the emulsion after developing, which have to be dispersed and disposed of. These are not soluble in water, and another chemical, namely sodium thiosulphate, commonly known as hypo, is used. This must be in excess in order to transform the sodium thiosulphate into silver-monosodium-thiosulphate, which, although soluble in water, is soluble in hypo solution, in which it becomes converted into a silver-disodium-thiosulphate. It is this double salt which is soluble in water ; hence the most important process of finally washing.

Where such definite chemical reactions have to take place, it does not require a very strong imagination to realise how very necessary and important it is to have the right quality of chemicals to start with. A slight impurity may retard the reaction, or even upset it altogether, and where developing or fixing is done by time, any slowing up of the solutions would tend to spoil the work.

How can the cine worker be sure of his chemicals ? It would require a very fully and well-equipped chemical laboratory to test for impurities, for these can be very numerous and, after all, the manufacturer, if he be one who is justly proud of his productions and values his trade, should surely be the one to find any impurity long before the chemical has reached its final stage of packing. Therefore, the answer to the query is to obtain your chemicals from a thoroughly reliable source.

As an example of what a slight impurity will do, a few years ago the following instance came to the notice of the writer. Several films on leaving the washing water had small comet-like specks, which were almost impossible to remove ; after unsuccessfully testing everything to find the

(Continued on page 39)

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Purity in Chemicals—*continued from page* 38.

cause, the chemical manufacturers were asked to give their opinion, and they made the suggestion that it was due to small particles of rust from the water supply. Flannel bags were immediately tied to the taps and the water allowed to filter through them, and at the end of a few days the bags were examined and consternation caused by the amount of dirt that had deposited in them. The installation of a new set of pipes ended the trouble. Only a small cause, but sufficient to give a lot of trouble ; so it is with any impurity which can upset the chemical reaction in a minor or major manner.

Lack of cleanliness will cause endless trouble, as will also a too strained attempt to economise ; for it must be remembered that a bath of chemical solution whilst functioning will absorb other chemicals from the senistised material, and these in conjunction will form other salts, some of which may be insoluble and settle on the film. An instance of this type occurred in a dark room where the operators ought, by the amount of work going through their hands, to have known better. When a bath was working slowly, instead of making a fresh one, a small quantity of the chemicals was dissolved and the solution poured and stirred into the tank as a replenisher. The stirring, of course, set all the precipitation of the "rogue" salts floating and, in due course, trouble became noticeable by sundry curious and irregular lines and marking. The film was first blamed and then the chemicals. On examining the tank, a rather bad smell was noticed, and after enquiries, the top liquor was syphoned off and a very heavy deposit of sludge was found at the bottom, which was due partly to overworking the solution, but mostly to laziness and the unclean habits of the laboratory.

Chemicals when pure are at the highest efficiency point, and their reaction on the emulsion is therefore the maximum. Any lowering of the purity standard, either by "foreign" matter, over-working, exposure to air, or mistakes in weighing—which throws the formula out of balance—will reduce the efficiency and bring about a loss either in the quality of the work or amount which can be turned out.

Have your chemicals pure. Never mind those few pence lower per pound which someone else offers you to get your order. It may not pay !

The greatest care is necessary in the dispensing of developing and fixing solutions. Those responsible should work in a secluded spot, so that no chemical dust or fumes can come into contact with film emulsions. Vats should be fitted with air-tight lids to protect the solutions against oxidisation. Remember that the emulsion maker uses only the purest chemicals for the tests on which he bases his formula.

The Film Society

A LARGE number of film technicians are members of the Film Society. It has been the practice to offer special membership rates to technicians and previously this has been at the rate of 15/- for the season. Details of next season's programme, and membership rates will not be available until early September. It is, however, hoped to extend similar privileges, and it is trusted that a large number of A.C.T. members will take advantage of these. All members who are interested should write Miss J. M. Harvey, Secretary, The Film Society, Ltd., 56 Manchester Street, London, W.1, who will forward full details as soon as available.

Royal Photographic Society

The Annual Exhibition—A.C.T. Members asked to co-operate.

ARRANGEMENTS are now in hand for this year's Exhibition of Kinematography, at the Royal Photographic Society, which is to be held from November 9th to 30th. The A.C.T. has, as before, been asked to co-operate in some of the lectures, which members will recall presented last year a programme of technical interest never before equalled outside America.

It is premature as yet to mention any of the subjects to be dealt with, but every technical interest will no doubt be covered. Full particulars of programmes will, in due course, be available to A.C.T. members.

Many studio workers enjoy a busman's holiday by running a sub-standard camera in their leisure moments. Such enthusiasts will be particularly interested in the Sub-standard Film Competition which is again being run on similar lines to last year, when the standard of entries was very high.

The closing date is October 1st. There are three classes of entries, as follows :—

Class I. (Open)—Any kind of film (*e.g.* personal, travel, story, cartoon, advertising, etc.).

Class II. (Open)—Restricted to Scientific films (*e.g.*, X-ray, medical, natural history, photomicrography, etc.).

In both these sections, films must not exceed 15 minutes' running time.

Class III. is limited to amateur films, and will not therefore be open to professional workers.

In each section a plaque may be awarded at the discretion of the judges, and a certificate is awarded to every film accepted. Films may be entered by members or non-members of the R.P.S., and there is no entrance fee. Entry-forms may be obtained from the Secretary, 35 Russell Square, W.C.1.

It is particularly hoped to attract a large professional entry this year, and in this connection it may be pointed out that advertising films, many of which are reduced to 16mm., are eligible. Incidentally, any professional worker who may feel that it is *infra dig.* to meet in competition with amateurs may be assured that there is nothing amateurish about films entered for R.P.S. competitions. The Judges include both amateur and professional workers.

The Kine Group Committee of the R.P.S. also proposes to stage a first-class wall display of stills of latest films, and production and other photographs of technical interest. It is hoped to have a representative show of stills, illustrating the progress of the film from the manufacture of the raw stock to its exhibition in the kinema. A number of studios will be receiving requests for such stills in due course ; in which connection one may suggest that in order to maintain the prestige of the Trade in the Society, the stills selected should be of the highest photographic quality, such as our still men can turn out, given the opportunity.

There will also be a trade exhibition of the latest apparatus, chiefly sub-standard, although our leading manufacturers of studio and laboratory equipment will also be represented.

The fact that the world's leading Photographic Society is taking this interest in the latest offspring of photography, and has invited the co-operation of our own Association, is sufficient reason for every one of our members to participate in some way or another in the Exhibition.

International Film Congress

OVER 2000 members of the cinematograph world, from almost every film-producing and consuming nation, attended the Berlin International Congress in April last, and it is believed that its work marks the beginning of a new era of international co-operation in all fields of cinematography. The "International Association of Film Artists" was spontaneously founded during the Congress and comprises the film workers of Austria, Czecho-Slovakia and Germany. The representatives of these three national organisations have issued an appeal to their fellow-artists in the other countries to join the new organisation.

THE BRITISH FILM INSTITUTE.

(A.C.T. is considering affiliation to the International Association of Film Artists and discussing the possibility of sending a delegate to the forthcoming Congress to be held in Venice).

"Eyemo" Chosen for Stratosphere Flight

Portable Camera with Studio Refinements

IN connection with the announcement that the National Geographic Society and the Army Air Corps, U.S.A., are planning a second stratosphere flight, to take place this summer, comes word that a Bell & Howell Eyemo 35mm. Camera has been selected for taking motion pictures during the flight. The purpose of the pictures is to show the appearance of the earth at different altitudes and to indicate the manner in which the stratosphere balloon rotates as it ascends.

The Eyemo is a turret model with a 6-inch lens. In order to cut through the tremendous depth of atmosphere at extreme heights and record the surface of the earth from the balloon gondola, heavy red filters and film sensitized to red will be used.

A piece of specially-selected, optically flat glass will be mounted in the gondola, forming a porthole through which the camera will point. The camera will be operated automatically to permit the operator to attend to other matters.

New Camera Design

VINTEN'S Model "H" Cameras having proved a great success, both in English and Foreign Studios, during the past three years, they have adopted a new design in their camera for rapid lens change.

This new piece of apparatus is of particular interest to news-reel cameramen, as it permits long-focus lenses to remain attached to the camera whilst short-focus lenses are being used. The camera body is still standard, but the front panel and lens turret are set at an angle of 6° from the focal plane of the film. This will allow the use of 40mm.-75mm. 9″ by 12″ lenses or, alternatively, 2″, 4″, 9″ and 17″ lenses to be mounted on the turret. Any one of these lenses can be brought into the taking position by turning the turret, thus obviating lenses being removed and dropped to the ground when a quick change is necessary.

Vinten's are now engaged on the production of a "Zoom" type view-finder, which will give a correct framing for the various lenses without the use of matts—a very difficult optical feat, which will be universally welcomed by news-reel camera aces.

Some Legal Rights and Obligations of Employers and Employees

By George H. Elvin

(Secretary, The Association of Cine-Technicians)

"We are all supposed to know the Law, and nobody does."—*Judge Parry.*

I HAVE been asked to outline a few of the more general rights and obligations concerning the legal relationship of employers and their employees as affecting film technicians. Such law is built up mainly on past judicial decisions—which a Judge could and may override at any time—and is largely influenced by trade customs from industry to industry. The film industry is a new one and as at present the practice of one section of the film trade often contradicts that of another, or one employer has different practices from another, it would indeed be difficult to establish the existence of any regular custom. Nevertheless, there are several general practices which would affect executives and technicians. The following are certain observations on general matters of employment, although, as the Film Industry is a new one, what may be termed trade practice might not strictly apply and a test case in a Court of Law might be necessary to establish such a practice.

Contracts of Employment.—It is not legally necessary, with one exception, that contracts of employment should be in writing. It is, however, desirable, as such a practice minimises the possibility of dispute, or, in the case of disagreement arising, facilitates settlement.

The one exception—that is, when the contract of service must be in writing—is in respect of an agreement which is not to be performed within the space of one year from the making of it. It should be noted that a general employment contract—whether it lasts more than a year or not—does not come within the scope of this exception. By general employment is meant an engagement where no time limit is expressed or where either party may terminate the agreement at any time. This covers the type of agreement under which most film technicians are engaged.

Length of Notice Terminating Employment.—It appears to be a general impression that the periods at which salaries are paid denote the length of notice required. That is, if one is paid weekly, a week's notice of termination of employment is all that is necessary.

This is not so. The periods of payment are regarded as a matter of agreement and convenience between the employer and his employee. The only rule that can be laid down on the subject is that the notice must be a reasonable one. Trade custom is an important point in these matters, and in this connection we have little guidance. In other industries the importance of the employee's occupation appears to be an important factor. We find, for example, that it has been laid down that, apart from agreement, a departmental head is entitled to at least three months' notice—whether he be paid weekly or not—and that in the case of an ordinary clerk whose engagement is obviously a weekly one, at a weekly salary, a week's notice would in ordinary circumstances be held to be reasonable.

There are certain cases in which an employee may be dismissed without notice, such as wilful disobedience, gross moral misconduct, gross negligence, incapacity to do the work for which he was engaged, and so on.

Payment for Sunday Work.—The Association was recently asked for its opinion on the question of payment for Sunday work and the following views were expressed :—

> "In the Association's opinion Sunday is a *non-dies*, and weekly employment implies only a six-day agreement. The custom of the trade varies and, whereas some firms act in accordance with this opinion, others do not. It is the view of the Association that those who do not do so make themselves liable for action."

If an employer makes a separate agreement with his staff to work on Sundays he can, unless he is bound by some other agreement not to.

Again, in view of the peculiar nature of the film industry, this can be but merely the expression of an opinion which might be upheld or overidden should a case ever be fought on this question.

Payment of Salary during Sickness.—An employee has been held to be entitled to payment of salary during sickness. Judge Mellor, K.C., ruled in Fordham *v.* Schwaldt & Co., that this is so, even when the employer gives the employee clearly to understand to the contrary. This is a matter of contract and agreement and may be varied. Unless agreed otherwise, an amount equivalent to any sum received under the National Health Insurance Acts cannot be deducted from salaries paid.

Compensation in respect of Accidents.—Compensation in respect of accidents may be obtained under one of three heads :—

(1) *Workmen's Compensation Act*, 1925.

It should be noted that a workman, within the meaning of the Act, is not merely a manual labourer, but any person, a woman as well as a man, who has "entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise." The Act, however, contains a list of certain classes of workers who are not covered by this definition.

An abstract of the Act is affixed, by legal compulsion, in a position where it can be easily read, in factories, workshops, etc., where certain persons who

come within the scope of the Act are employed. Certain parts of film studios come within this provision.

(2) *Employers' Liability Act*, 1880.

This Act covers, in the main, personal injury caused through defective machinery or equipment, negligence of persons in a position of superintendence or by reason of the act or omission of any persons in the service of the employer, done or made in obedience to the rules or particular instructions of the employer. There are, however, certain defences available to the employer which restrict the utility of this Act.

(3) *Claim at Common Law.*

A claim for damages in respect of injury occurred through an employer's negligence may be made at Common Law.

The first step to be taken in respect of a claim for compensation is to give notice of the fact of the injury and to state the intention to claim compensation. It is not necessary at that stage to claim any specific sum, but notice must be given as soon as practicable after the occurrence of the accident.

Conclusion.—In conclusion, may I stress that members, in their own interests, should clarify their own position, with reference to terms and nature of employment, as much as possible. Several of the cases which have been brought to the Association would have been considerably simplified if copies had been kept of important correspondence, and verbal and telephonic communications and appointments confirmed by letter. This is not a difficult request, and one that may save a considerable amount of time and trouble should some misunderstanding or disagreement arise.

Lastly, if a member feels he has a grievance, he should not take the matter in his own hands and threaten legal action or take such proceedings. Consult your Association first, and with its help and guidance try to obtain an amicable settlement which will leave no ill-feeling behind it. Legal action can come later should it prove to be necessary. Every other avenue should be explored first. Building a wall of enmity between employers and employees does neither you, nor your fellow-technicians, any good. Moreover, the Law—like the Ritz Hotel—is open to everybody!

Customs Regulations—*continued.*

The forms required for the examination of the raw stock are Form 563 in duplicate and a Shipping Bill, No. 114 (sale).

Cameras and equipment should be detailed on the following forms in duplicate:—British Gear Form, No. 29; Foreign, Form No. 30, and produced to H.M. Customs Officer at the port of embarkation, when one copy will be handed back to the exporter duly signed and must be preserved for presentation on the return journey.

(*Editor's Note.*—The Customs Officers dealing with film work are very busy people. Give them plenty of time to deal with your case and get to the Departure Dock in good time so that your camera and stock can be shipped in advance of the other passengers.

The Films Officer is located at Shaftesbury Avenue, and is always ready to help you.)

Customs Regulations for the Film Trade

From enquiries of H.M. Customs Service, we are able to give the following details of Customs regulations and duties:—

Rates of Duty—	*Full.*	*Preferential.*
Mute negative, ...	5d per ft.	$3\frac{1}{3}$d per ft.
Sound negative, ...	10% of value.	Free.
(A minimum value of 4/2 per ft. operates).		
Combined negatives ... (Sound and Picture).	5d per ft.	$3\frac{1}{3}$d per ft.
Mute positive, ...	1d per ft.	$\frac{2}{3}$d. per ft.
Sound positive, ...	$33\frac{1}{3}$% of value.	$22\frac{2}{9}$% value.
(A minimum value of 1/3 per ft. operates).		
Combined print, ... (Sound and Picture).	1d per ft.	$\frac{2}{3}$d. per ft.
Raw Stock, ... (Negative or Positive).	$\frac{1}{3}$d. per ft.	$\frac{2}{9}$d. per ft.
Cameras and other optical instruments,	50% ad val.	Free.
Objectives, etc., ...	do.	do.
Sound recording cameras, all types and sound heads,	do.	do.
Photographic paper, plates and flat films, ...	25% ad val.	Free.
Still negatives exposed,	do.	do.
Stills (Prints), ...	20% ad val.	do.

Duty Reliefs.

No. 1.—If it is proved to the satisfaction of H.M. Customs in respect of any imported negative cine film, developed or undeveloped, (1) that the production of the film was organised by persons whose chief or only place of business was in the United Kingdom, and (2) that the producer is a British subject and domiciled in the United Kingdom, and that all the principal actors (including the cameraman) employed for the production, except five, or, if the total number of principal actors is less than twenty, not less than three-quarters of the actors were British subjects domiciled in the U.K., the rate of duty payable on the negative is reduced to $\frac{1}{3}$d. per foot.

The regulations governing the issue of a "Certificate of Approval" for the above films are issued as Statutory Rules and Orders, 1925, No. 1368, obtainable from H.M. Stationery Office, "Adastral House," Kingsway, W.C.2.

Any application for a "Certificate of Approval" must be made before the departure of the producer and his Unit and should be addressed to:—

H.M. Customs and Excise,
First Floor,
61/63 Shaftesbury Avenue, W.C.1.

No. 2.—Any Negative film which is certified by the Board of Trade as being a British film within the meaning of Section 27 (3) of the Cinematograph Films Act, 1927, is also admitted at the reduced rate of $\frac{1}{3}$d. per foot. The regulation governing this is issued as Statutory Rules and Orders, 1928, No. 649.

On importation the films must be removed to the Bonded Film Store, Endell Street, London, W.C., for examination.

If the raw stock is taken out of England with the Unit, arrangements should be made for its examination by a Customs Officer from Shaftesbury Avenue before exportation. In such cases no duty will be required on re-importation.

(Continued at foot of preceding column)

Second Annual General Meeting

THE Second Annual General Meeting of the Association was held at the Poland Rehearsal Rooms, on Monday, May 27th. Fifty members were present, with Mr. S. H. Cole in the chair.

Annual Report

The Annual Report revealed continued progress, increased membership, and the accomplishment of much good work. The following are its main items :—

Conditions of Employment.—A questionnaire has been circulated with a view to obtaining accurate records of salaries and conditions of employment. Acting upon information obtained through this source, one of the major companies has recently raised salaries in two of its departments in order to bring them in line with those of other major studios. Recent departmental discussions led indirectly to a department in another major studio negotiating a minimum salary for its first-grade technicians.

Apprentice Schemes.—In an interim Report, an Apprenticeship Sub-Committee concludes that there are nine point essential to any Apprenticeship Scheme which might commend itself to A.C.T. These are :—

(1) Full co-operation of major studios is essential.

(2) Relationship should be established with schools and kindred bodies conducting courses in kinematography. Where necessary, alterations and amendments should be suggested to enable courses to be approved both by A.C.T. and studios.

(3) Scholarship schemes in conjunction with these courses should be instituted by A.C.T., studios, schools, and other educational bodies, in order to minimise economic disadvantages.

(4) No premiums should be payable.

(5) Any apprentice who has passed through a recognised course should serve a shorter qualifying period in the studio than one who has not.

(6) Any person who has been an "apprentice" prior to the scheme and applies to A.C.T. Employment Bureau shall be interviewed by Council representatives with a view to deciding whether or not he can be recommended for suitable employment. Such persons should be placed in a Special Apprentice Grouping.

(7) A.C.T. should draw up minimum rates of pay for all grades of technicians and no apprentice should be permitted to do a job in a studio for which he receives less than the recognised salary for that particular job.

(8) Every apprentice should hold an A.C.T. Apprentice Ticket, which shall entitle him to attend lectures and film shows, and purchase *Journal* at member's rates.

(9) The number of apprentices admitted to any one studio during any one year should be limited by agreement between the studio and bodies concerned.

Co-operation with Kindred Organisations.—It is felt that some form of co-operation is desirable between the Association and kindred organisations and, as a first step, informal discussions have been held with representatives of the National Association of Theatrical Employees. Any eventual agreement, of course, will not impair the independence of either body.

Employment Bureau.—Several firms and studios are taking advantage of the Association's Employment Bureau and, since January, permanent or semi-permanent engagements have been found for some twenty technicians. In addition, the Association has been instrumental in the engagement of several members for temporary and news-reel jobs. (N.B.—The number of members found employment has been more than doubled since the date of the annual report).

Health and Hospital Benefits.—Full details of these benefits were given in the last number of the *Journal* and need not, therefore, be repeated here. Members' attention, however, is drawn to the note on the Manor House Hospital on page 44.

Foreign Technicians.—The Association has maintained its contact with the Ministry of Labour and has been effective in certain cases in preventing the employment of foreign tenchicians where British technicians were available.

Legal Advice.—The Association has continued to give legal advice to members, but emphasises that, if this service is to be of help, members should consult the Association immediately any assistance is required.

"Journal" and Educational.—The *Journal* of the Association has been very well received and a complete sale of the first number is assured. During the winter, lectures and films shows were organised by the Association and, commencing in October, such activities will be organised regularly throughout next winter.

Through the continued co-operation and kindness of the Royal Photographic Society and the British Kinematograph Society, members have continued to be invited to attend their lectures and, in the case of the former, four A.C.T. members have been invited to lecture for them.

Kinema Club.—The Kinema Club, 4 Denman Street, W.1, has offered to place one of its rooms at the disposal of A.C.T. for meeting purposes and make its general facilities available to members. A specially reduced subscription has been arranged, which will be borne by the funds of the Association. A.C.T. members, therefore, may join without cost to themselves. Members wishing to take advantage of this offer should apply to the Secretary or any Studio Secretary.

Rules.—The Rules of the Association were entirely revised at a Special General Meeting on March 4th and copies will be available to members shortly.

Conclusion.—The Annual Report concluded : "The General Council would like to emphasise that the future of the Association is in members' own hands. With your

co-operation we can accomplish much—without it, we are powerless. We do urge every member to strive to make A.C.T. 100% strong. Only when we are in this position can the full benefits of organisation be felt."

Amendments to Rules

Departmental Meetings.—Mr. C. Williamson moved that Rule 26 be amended by the addition of the following clauses :—

"Departmental Meetings of technicians throughout the Industry shall be called at least once monthly and all members of the Association in that particular department shall be entitled to attend.

"At the first meeting of each department in each financial year there shall be appointed a representative of the department as a whole to serve on the General Council of the Association. The Department shall be empowered to send a substitute for that representative when he is unable to attend a specific meeting of the General Council."

The amendment was unanimously carried, as well as one or two subsidiary amendments dealing with the same viewpoint.

Annual Subscription.—Mr. J. Dennis moved that an annual subscription be substituted for a weekly one, but after a long discussion the amendments were defeated on a majority vote.

Election of Officers

Principal officers were elected as follows :—

President—There being no nominations, the post was left vacant to be filled at the discretion of the General Council.

Vice-Presidents—Thorold Dickinson, Kenneth Gordon and Ivor Montagu.

Treasurer—A. A. Englander.

Auditor—H. Couchman, F.I.A.C.

General Council Members (under Rule 50)—L. Beattie, S. H. Cole, J. Dennis, D. Dickinson, A. Fisher, C. Knott, A. Lawson, T. S. Lyndon-Haynes, F. A. Swann.

(Other members of the Council, representative of Studios and Departments, are elected by those bodies).

Appreciation.—The meeting concluded with a vote of thanks to the Chairman, moved by Mr. Kenneth Gordon, in which he made a vigorous appeal for increased support of the Association, and a suitable response by Mr. S. H. Cole.

"Thirty-Nine Steps"

In our last issue we showed a photograph of Miss Madeline Carroll, Miss Alma Reville and Mr. Alfred Hitchcock, taken during the production of "Thirty-Nine Steps," by Gaumont-British Picture Corporation Limited, and it was stated that this photograph was reproduced with the permission of that Corporation.

Although at the time this photograph was inserted we had reason to believe that it had been furnished from official sources, we have since learned that this is not the case and that the Gaumont-British Picture Corporation, Limited, did not in fact grant any permission for this reproduction. We, therefore, offer that Corporation our apologies for having inadvertently made a mis-statement in this respect, and for having reproduced the photograph.

Departmental Meetings

In accordance with the Annual General Meeting decision, monthly meetings of members in the various departments throughout the industry are being organised. The first of these meetings were held in July. Some were well attended. Others had only poor support. In view of the difficulties of late work preventing some members from attending, it was suggested at one meeting that the question of Sunday meetings be considered in order to give more technicians an opportunity to attend. We should be pleased to hear of members' reactions to this suggestion, either by conveying opinions to Studio Secretaries or dropping a line to Head Office. We shall be pleased to fall in with the general desire.

Manor House Hospital

Full details of membership of Manor House Hospital were given in the last number of the *Journal*. For the payment of one penny per week—or a guinea a year in the case of members earning over £250 per annum—A.C.T. members are entitled to the full benefits of membership, which include free treatment in the case of accidents and service at preferential terms in the case of optical and dental treatment.

We feel that we have placed before members an excellent insurance against the very heavy expenses of the usual hospital treatment. Several members are now subscribing regularly, but the number of members should be far greater. Membership forms may be obtained from the Secretary of A.C.T. or Studio Secretaries. We do urge members, in their own interests, to join without delay.

The Journal of the Association of Cine-Technicians

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Lawrence P. Williams

A.R.I.B.A., A.A.Dip.

The Art Director

TEN years ago there were still Studios in this country which boasted they could produce films without an Art Director at all, relying entirely on the inventive genius of the Master Carpenter to juggle the stock "Panelled Room" set and the twenty-five stock flats into as many different sets as their films might require.

Since then we have progressed through the era of the scenic artist, who worked on the principle that to show the Master Carpenter a photograph or rough sketch of what he required completed his duties, to that of the stage designer who thought it rather fun to do a film now and again. He really despised everything connected with them but the money, and even then, when the Pantomime season came round again, he was not quite sure that films were worth it.

Nowadays, we have a department organised on the lines of an architect's office, numbering amongst its permanent staff, Sculptors, Architectural Draughtsmen and Quantity Surveyors, and including a comprehensive reference and periodical library, architectural model-making department and blue-printing plant. The introduction, in the near future, of colour and stereoscopy will, indubitably, tend to increase the staff of an Art Department by such additions as colour experts; though it is to be hoped that colour will be used sparingly for the backgrounds and concentrated in the costumes of the artistes.

LAWRENCE P. WILLIAMS.

The Art Director's duties should begin directly the purchase of a story has been completed and the adaptation for the screen begun. It has always been my experience that much money can be saved and fewer hearts broken in the long run, if the practical possibilities in reference to what can or cannot be erected within the shooting schedule, or the amount of stage space available and the financial budget, are discussed between the script writer, the Director and the Art Director before the script is finally written.

Upon the delivery of the script to the Art Department, the procedure must vary according to its composition, but will be roughly that the Supervising Art Director, if not personally designing the film, will hand the script to a Unit Art Director who will read it through with the Director, meanwhile making marginal notes and rough sketch plans of the action and particular requirements of the Director regarding special action and at the same time discussing fully the characters in the story, in order that they may eventually seem to inhabit naturally the surroundings the Art Director will create for them. He will then produce a series of Esquisse to show to the Director as a guide to the layout and atmosphere he proposes. The number of sketches prepared will vary with the type of picture in preparation, from one for each set for the ordinary programme picture, to one for each master scene in the carefully prepared super. The medium in which these sketches may be prepared extends to any known method, but the most economical for the quick and broad effects required by the Art Director is undoubtedly Fusains Comprimes on tracing paper which may eventually be mounted on mill-

board for more effective presentation and durability.

Speaking broadly, the Art Director of Commercial films will find his subject fall under two headings—Drama and Comedy. In each he fulfils an entirely different function.

In the former he should produce upon the screen a series of pictures which, by their composition in light and shade, augment the action of the characters involved. In the latter, his duties do not proceed beyond providing a pleasantly inconspicuous background which will not distract from the action, although an occasional display of the spectacular may be useful for production value purposes. With its lighter type of background, comedy undoubtedly forms the finest training for the young Art Director, more especially if he has had a previous architectural training.

Once the sketches have been passed by the Director, the Quantity Surveyor attached to the Art Department will, with the Art Director, produce an estimate based on estimated time of labour and cost of materials, and once this price has been accepted by the powers that be, the Art Director and his assistants must curb their desire for over embroidery whilst the drawings are in the working drawing stage.

To go over estimate is the greatest crime an Art Director can confess to, for the film business is no philanthropic institution. In America I have known Art Directors of international repute dismiss discussion of what one would presume their most successful work, with "We won't mention that one, we were $5,000 over."

Working drawings are prepared to half or quarter inch scale, according to the custom and convenience of a particular Studio. After which, they are full-sized where necessary, and distributed to the various carpenters, plasterers, ironfounders and other shops necessary for their particular execution.

In the Art Department is a large blackboard, upon which plans of all the stages and the lot of the Studio are drawn to scale. On this board, plans of the various sets are placed, representing the position each will occupy when built. This is a very necessary piece of organisation, and much skill is often necessary in planning a shooting schedule on this board so that each set will be erected ready to be

"WHILE PARENTS SLEEP," 1935. Mrs. Hammond's Drawing Room, London.
LAWRENCE P. WILLIAMS, A.R.I.B.A., A.A.Dip.

"THARK," 1932. A Gate in the Garden Wall of "Thark" House.
LAWRENCE P. WILLIAMS, A.R.I.B.A., A.A.Dip.

shot in its correct sequence and to prevent the shooting of one set by the awkward placing of another in too close proximity to it on the stage.

Now go on to various other duties, such as selecting furniture, dressing data, and trips abroad.

The duties of the Art Director and his assistant extend to the supervision of the building of the set in the shop, and also during its erection on the stage, but curiously enough, owing to an old custom of the industry, he is not responsible for the safety of artists and others on the set. In other words, the construction of the set is not his job. This custom most likely dates from the time when Art Directors were recruited from the ranks of scenic artists and others whose knowledge of construction was considerably less than that of the master carpenter who worked under them.

Now that most Art Departments number amongst their staff more than one qualified architect, this does not apply to the same extent, though the principle still sticks.

During the time that the set is in course of erection on the stage, the Art Director will be worrying about the selection of curtains and furniture with which it will be dressed.

This is a most important part of his job, which is often so far neglected that it is left, in many large firms in this country, entirely to the tender mercies of an outside property man. Nothing could be more short-sighted, as the entire character of the most beautifully-designed set can be lost when furnished by someone not constantly in touch with the characters and their moods in relation to the story.

It is quite apparent that one whose job is to spend his time outside the Studio collecting special hand props and is in no way associated with the script, cannot be suitably equipped to select furnishings for a picture of any pretensions.

In connection with films requiring a foreign background, an Art Director to a Company has, from time to time, opportunities for foreign travel, to collect data and local colour for his settings. English Art Directors, by their proximity to the Continent of Europe, are much more

(*Continued at foot of page* 47.)

Twelve Hours' Hard Labour

"Long hours are an excellent means of slowing down work and lowering its quality," says C. SCARBOROUGH, of the National Institute of Industrial Psychology.

SINCE the Cinema searches successfully for its materials among the reigns of the Stuarts and the Tudors, I need make no apology for seeking some of mine in the records of the last War, among trenches and munition factories.

A trench-digging competition was in progress. Two teams were busy digging their furrows—or rather one was busy and the rest seemed to be taking things easily. All the first team were working all out all the time. The other team was divided in three gangs, one of which worked for ten minutes, while the others sat about. Then it was relieved for twenty minutes, while the two other gangs did the digging in ten-minute spells.

That team won easily.

. . . . . .

Munition factories were turning out supplies as rapidly as they could. The need was urgent; more and more shells were wanted. Working hours were steadily increased. Longer days, no Saturday afternoons off, work all day Sundays. Still the demand was not satisfied.

Somebody suggested that they were working too hard, and wanted to cut down the number of working hours and to abolish Sunday work. And he got his way. Instead of 66 hours per 7-day week, they worked for 47 hours per 6-day week. Instead of turning out 108 fuse bodies an hour they turned out 169—7943 a 47-hour week instead of 7128 in a week of 66 hours.

There were numerous examples of the same thing. In another plant, hours were cut from 66·7 to 55·5 a week, and production went up 19 per cent. Elsewhere a reduction from 68 to 60 hours a week increased output by 8 per cent.

Nor are examples confined to factories or to war conditions. The National Institute of Industrial Psychology, in investigations of many kinds of work, has found that long hours are an excellent means of slowing down work and lowering its quality. Once you begin to work long hours, you unconsciously adapt your work to them. It's rather like running a race; for a hundred yards you can go all out, but you conserve your effort if you have three miles in front of you. If you've got a reasonable day's work before you, you will work hard; but if you know that your work may last till ten o'clock at night, till midnight, till the small hours of the morning, then automatically, and quite unconsciously, you will allow for it. And the probability is that you'll get less done and you won't do it so well.

For the effect of long hours on quality is quite as definite as on quantity, even if you cannot work it out in percentages. When you've worked twelve hours already, your great desire, whether you admit it to yourself or not, is to get the lurid job finished and go to bed. The camera-

(*Continued on page* 49.)

The Art Director (*continued from page* 46.)

conveniently placed for these trips than their American colleagues. I have, however, known of interesting excursions made by American Art Directors to South America and the Canal Zone.

It is my personal experience that in some countries in Europe an Art Director may have tried all his qualities of patience and tact before he can gain the permissions and data he may require.

Another interesting and instructive duty of the Art Director, more often than not neglected I am afraid by the less conscientious of us, are periodical visits to various Art Galleries to study examples of lighting and composition as executed by the different masters. It has been my experience that these visits prove much more interesting and instructive if one's companion is a Camera Man.

In conclusion, let all English Art Directors exert their energies to producing their best endeavours within a reasonable estimate, and they will have done more for the shareholders of their Company, and incidentally to place the British Film Industry on a sound commercial footing, than any plaudits they may gain for larger and more ostentatious sets.

A Still Larger "Journal"

WE have again enlarged this issue by four pages as a result of a further increased number of firms taking advertising space. Their co-operation has made a larger *Journal* possible. Readers desiring this progress to continue and be extended should support our advertisers—all well-known and reputable firms. In this way both the *Journal* and its readers will benefit.

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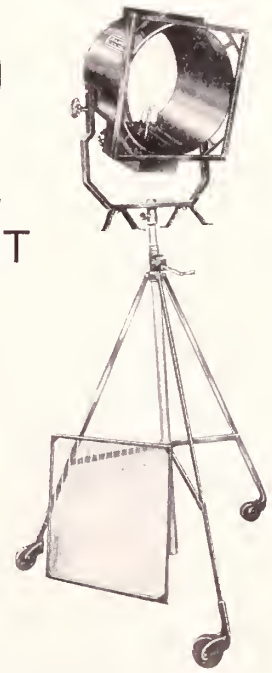

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Films, Filters and Filter Factors

I. D. WRATTEN (of Technical Service Kodak Ltd.)

One of the many difficulties that a cameraman has to overcome is that exterior shots usually display a less marked scale of contrast than the subjects with which he is accustomed to deal in the studio. At the same time the sky is generally of much greater intensity than any other portion of the graduation scale, and it follows that in order to obtain detail in the shadows it is often necessary to over-expose the sky.

This over-exposure, which tends to destroy in the picture the finer differences in intensity perceived by the eye, can be eliminated by the use of yellow colour filters absorbing strongly the blue and ultra violet rays in which the sky light is rich. This, of course, has the effect of lengthening the scale of intensities which the film is capable of rendering, whilst at the same time the action of the filter in accentuating colour contrasts further assists in differentiating white clouds against the blue background of sky.

It is important to note that when filters are used the exposure must be increased, and it is necessary, therefore, to know the "filter factor" of the particular filter it is desired to use. The filter factor is the factor by which exposure with a filter must be increased over the normal exposure using no filter on the same scene and with the same film. For instance, if a filter has a factor of 4, then to use it and obtain a properly balanced exposure it is necessary to increase the exposure normally given without a filter by that factor. If, for instance, it is found that the normal exposure required is lens stop f8, then when using a filter having a filter factor of 4 it is necessary to open the lens to f4, since the lens opening is then doubled and the exposure, which varies as the square of the opening, is increased four times.

In Fig. 1 is set out the exposure table for various contrast filters when using Eastman Super X, and the same type of exposure table when using Eastman Super Sensitive Panchromatic or Eastman Background Panchromatic is given in Fig. 2. As can be seen, these tables shew the filters across the top, the filter factors across the bottom, while the left-hand column shews a series of arbitrarily chosen lens stops under the heading "No Filter." All values are expressed in terms of f values.

The use of these tables is extremely simple. Suppose for instance, a scene is to be photographed, both filtered and unfiltered, and that the correct exposure is found to be f5·6. Suppose further, that the Areo 2 filter is selected for use. Select in the left-hand column under the heading "No Filter" the value f5·6, project across the table in the line shewing this value until the column headed Area 2 filter is reached. At this point the value f4·5 is found. Therefore, the scene shot unfiltered at f5·6 can be shot with the Areo 2 filter at f4·5 and equally exposed negatives will be obtained, although the filtered scene will shew a different relation between sky and foreground due to the selective absorption of the filter.

It would, perhaps, be of assistance to the cameraman if definite filters could be quoted as the ones to use in certain definite instances. Unfortunately, this cannot be done, because conditions under which filter shots are made vary tremendously. However, the guiding principle that governs all these cases is that to subdue a colour a filter whose colour is the complement of that to be subdued must be used, while to lighten a colour, a filter of the same colour must be used, since this filter will fully transmit the desired colour and subdue the others.

Most of the filters listed in Figs. 1 and 2 are well known to cameramen and need no introduction. The 3-N-5 and 5-N-5 filters, however, require explanation. It is well known that certain exterior scenes require the use of a high aperture lens having a small depth of focus in order to obtain a particular image quality. The use of Super X and Super Sensitive Panchromatic film requires that less exposure be given than was necessary with the older types of Panchromatic materials. Now, since it is desired that a high aperture lens be used, it is obvious that to reduce exposure a reduction must be made of the angular aperture of the shutter (which is undesirable), or a neutral density must be used in front of the lens. The 3-N-5 and 5-N-5 filters were introduced to provide for cases like this. They are combinations of a yellow filter with a neutral density.

FIGURE 1.

Eastman Super X Panchromatic Filter Exposure Table for Daylight Expressed in "F" Values.

No Filter.	Aero 1.	Aero 2.	3-N-5.	5-N-5.	G.	23A	A (25)	72
2·3	2·0	1·8	...	...	...	...	...	
2·8	2·5	2·3	1·4	...	1·6	1·4	...	Night
3·2	2·8	2·6	1·6	1·4	1·8	1·6	1·4	Effect
3·5	3·1	2·8	1·8	1·6	2·0	1·8	1·6	Filter.
4·0	3·6	3·2	2·0	1·8	2·3	2·0	1·8	
4·5	4·0	3·7	2·3	2·0	2·6	2·3	2·0	Use at
5·6	5·0	4·5	2·8	2·5	3·2	2·8	2·5	f2·3
6·3	5·6	5·2	3·2	2·8	3·6	3·2	2·8	to
8·0	7·1	6·5	4·0	3·6	4·6	4·0	3·6	f3·5
11·0	9·8	9·0	5·6	4·9	6·3	5·6	4·9	
12·5	11·2	10·2	6·3	5·6	7·2	6·3	5·6	
16·0	14·3	13·0	8·0	7·2	9·2	8·0	7·2	
22·0	19·7	18·0	11·0	10·0	12·5	11·0	10·0	
Factor								
1	1·25	1·5	4	5	3	4	5	

FIGURE 2.

Eastman Super Sensitive Panchromatic Filter Exposure Table for Daylight Expressed in "F" Values.

No Filter.	Aero 1.	Aero 2.	3-N-5.	5-N-5.	G.	23A.	A (25)	72
2·3	2·0	1·8	...	...	...	...	...	Night
2·8	2·5	2·3	1·4	...	1·6	1·6	1·4	Effect
3·2	2·8	2·6	1·6	1·4	1·8	1·8	1·6	Filter
3·5	3·1	2·8	1·8	1·6	2·0	2·0	1·8	
4·0	3·6	3·2	2·0	1·8	2·3	2·3	2·0	Use at
4·5	4·0	3·7	2·3	2·0	2·6	2·6	2·3	f.2·3
5·6	5·0	4·5	2·8	2·5	3·2	3·2	2·8	to
6·3	5·6	5·2	3·2	2·8	3·6	3·6	3·2	f3·5
8·0	7·1	6·5	4·0	3·6	4·6	4·6	4·0	
11·0	9·8	9·0	5·6	4·9	6·3	6·3	5·6	
12·5	11·2	10·2	6·3	5·6	7·2	7·2	6·3	
16·0	14·3	13·0	8·0	7·2	9·2	9·2	8·0	
22·0	19·7	18·0	11·0	10·0	12·5	12·5	11·0	
Factor								
1	1·25	1·5	4	5	3	3	4	

Motion Picture Society of India

Affiliation to A.C.T.

In pursuance of the Association's policy of maintaining close contact with technicians in other countries we are pleased to report that the Motion Picture Society of India has just affiliated to A.C.T. Journals will be exchanged and facilities of membership granted to members of either Association when visiting either India or England, as the case may be.

Members visiting our office will be pleased to read the Journal of our Indian colleagues, which is an excellent technical publication dealing with all aspects of Indian Film production, which incidentally is a much larger business than many of us imagine.

We feel sure that both Associations will benefit as a result of this co-operation.

Twelve Hours' Hard Labour (*continued from page* 47.)

man worries less about subtle and effective angles. So long as the lighting "will do," it will probably be passed, whereas six hours ago new arrangements would be tried and modified and adjusted. You can frequently spot the shooting in a film that has been done when everybody has been tired and stale. You can often detect the smell of midnight oil about the cutting of a film which has been raced through at the last moment. You can sometimes murmur, in fact, "No, that's not just bad acting and bad direction. It's simply that the actors are tired and the director snappy and bad-tempered. They've had too long a spell on the set."

. . . . . .

There is an idea abroad among people unconnected with the cinema industry that everybody concerned with making films is endowed heavily with the "artistic temperament." Nobody but a publicity man, surely, could have invented that term and invested it with glamour. We all utter it with breath hushed in awe and admiration and envy; and people who need something to bolster up their claims to genius tend to cultivate a bad temper so that people can talk about their "artistic temperament."

For seventy-five per cent. of artistic temperament is just simply bad temper. And I would hazard a guess that at least seventy-five per cent. of the bad temper of the film studios is tiredness. It's another manifestation of too-long hours. The stills man may always be a nuisance, but towards the end of a long and tiring day he becomes a bloody nuisance—and you probably tell him so and are quite definite about the things that will happen to him if he doesn't get his ——— camera out of the ——— way ——— quick! And then you curse somebody else. It seems obvious enough that nobody is going to do very good work in that atmosphere.

I do not know whether there is a film studio with a rule that nobody shall work more than eight hours a day, or more than seven if a film is going through against time. And I don't know whether anyone would have the strength of mind to obey the rule if it existed.

But I am quite certain that it would result in better films, and in that it would drastically reduce the time required to make them. The industrial psychologist has a lot of work to do in the cinema industry!

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Ivor Montagu

Lament of a Diehard

It will be remembered that, when talkies first came in, I was one of those who, Jonah-like, roamed the country wailing of the awful things that were going to happen, Cinema going to the dogs, etc., etc. Now, six years later, I am still unrepentant. I am convinced the Cinema has gone downhill, and is not capable of the power of impression it exerted then.

Were you a fan in the old days, or is your interest in the Cinema only recent? If you *were* a fan, come on, answer me honestly, does any picture you see nowadays mean as much to you, give you the deep-down excitement, that dozens used to in the old days? Do the modern stars seem as thrilling? I can remember scores of silent films of most diverse type: the old Griffiths, "Stella Dallas," the old Lubitschs, "Black Pirate" and other Fairbanks, Cinderella, the first Soviet silents ("Mother" and so on), "The Big Parade," "The Merry Widow," at every one of which I received an experience that has outlasted in my memory any talkie I've ever seen. Who that saw it has ever forgotten the moment when in "The Big Parade" the troops move forward towards the front line, in a pictorial composition based on Nevinson's famous "Road from Arras to Bapaume"? And where has there been a moment in talkies like it?

Ah, well! I know perfectly that these sighings *may* be merely the jaded sourness of old age. I *may* be no longer so fresh and impressionable as I was. Perhaps. This is possible, and if it were true, alas I wouldn't know it. But it is also possible that my subjective impressions not so inaccurately register a real objective weakening. After all, it wouldn't be so wonderful if it were so. No one could be surprised, or regard it as a proof of ultimate weakness, if the talkies at the end of six years had failed to rival the masterpieces achieved by the silents after thirty. The danger would only be, that in a normal human complacency with "things as they are," we might not recognise this state of affairs and might, in effect, be content to standardise mediocrity. To save us, I propose to do a spot of stock-taking, which cannot of course be exhaustive here or any more than sketchy.

Under what heads did Jonah cry his warning? Here we shall list:—

(1) Limitation of material.
(2) Limitation of speed by dialogue.
(3) Limitation of comedy.
(4) Limitation of universality.
(5) Limitation of sound range.

Ivor Montagu *entered the film industry in* 1925 *as partner of Adrian Brunel. Directed, among other films, H. G. Wells' comedies and (with Geoffrey Barkas) "Wings Over Everest." Edited and titled over one hundred silent pictures. Writer with Paramount* 1930, *and co-author with Eisenstein of scripts (never produced) for "Sutter's Gold" and "American Tragedy." Translated various theoretical writings of Soviet film directors. For the past two years Associate Producer at Gaumont-British. A Vice-President of A.C.T.*

1. Limitation of Material.

In the early days of sound the camera sat in a closed box prison with the recording apparatus. When at last it emerged, it only did so shackled by a clumsy blimp. We set up a howl: "No more outdoor pictures—the camera has lost its mobility." This fear has proved unfounded. Silent cameras or others that can work in a rough swathe of eiderdown, directional microphones, have emancipated us largely from these shackles. Post-synchronisation ("dubbing") has completed our freedom. We can, at a pinch, now find technical means of using for story material anything that was available to the old silent film. But, all the same, there can be no doubt that even here we are standardising a bit too early, and we could do without the complicated weight of apparatus that has to be taken with us on exterior. The sound-recording equivalent of the Newman-Sinclair and the Eyemo is said to exist. Where? I have not seen it used in practice.

As a point of humility, by the way, if material available for sound pictures has not been reduced, neither has it been so much increased. Singing and dancing, neither of which the silent film could attempt, and both of which the first talkies ("Singing Fool," etc.) dealt with as child's play tasks, remain the sole new conquest. Where, for example, is the talkie drawing-room comedy (a field one would think particularly the province of talk) that has impressed or earned fame by its wit as "Kiss me Again" or "The Marriage Circle"? None the less, we will admit, *technically* sound apparatus has not limited material in production. Its limitation on material in audience reception will be dealt with later.

2. Limitation of Speed by Dialogue.

We forecast that talk would make pictures slow. We pointed out that to see a face as it spoke was for the audience to receive two impulses giving the same information. Either the mood was understood from the speech, and the face must be dull. Or the face was expressive, and the speech must be unnecessary. If both were eloquent, one was supererogatory. It was forgotten, we pointed out, that on the stage, for the vast majority, the typical spectator, speech alone conveys the impulse, supported by a general visual colouring of the movements on the stage. No one outside the tiny few in the front row of the stalls ever glimpses the expression of the face. To receive both speech and face would give an effect of slowness.

To solve this, we proposed all manner of counterpoints. It is, indeed, remarkable how much the counterpoint we most foretold—the dissociation of a sound from its causing image (*i.e.*, when a voice is heard at the moment the listeners and not the speaker appear on the screen)—has, for the most part undeliberately, entered sound-image cutting as a matter of course.

But there is one very interesting solution we did not foresee. A new and special sort of dialogue for films (opposite to the stage dialogue that tells the story) has appeared. The characteristic of this dialogue is that it states *precisely the opposite of what the speaker is really thinking*. Charles Macarthur is the master of this type of dialogue. It remains true, as forecast, that sincere dialogue, a poetic play or love scene in which the characters "open their hearts," is on the screen dull and slow. But every scene in which there is a dichotomy of mood, the speech belies the feelings, a love scene in which the passionate lover expresses his adoration with "Get out of my light, you big stiff," is fast and vivid because in it *both* speech and image is necessary and the audience's delight is made only by the unity resulting from the conflict of the two. All the most vivid speech scenes in talkies are of this type. Recall the terrific pace of "Get Rich Quick Wallingford" (Macarthur), where 90 per cent. of the dialogue was confidence tricksters' patter. The scenes of "Mädchen in Uniform," where repressed girls or prim and proper teachers are constantly uttering sentiments in conflict with their volcano of feelings within, expressed by their good acting. Or the Benedick and Beatrice formula love-scenes of "39 Steps" or "It Happened One Night." In their different ways all these are examples of typical film dialogue, dialogue that does not slow films. However, it is a revenge for the aestheticists that, even if they did not foresee it, this is of course also a form of counterpoint, counterpoint of feeling and utterance.

3. Limitation of Comedy.

One of the silliest complaints we made was to suppose that comedy would be handicapped because, as the reactions of the audience at any given performance could not be foreseen, the comedian could not make the necessary timing adjustments, and the second line would often be lost in the burst of laughter that greeted the first. This was silly because, although it happens, it worries no one. Fortunate indeed is the audience that has cause to laugh loud enough to drown a following line. And since the heart doesn't grieve over what it never knows it's missed, the loss causes no qualms.

The strongest solution found is to pack a talking comedy so cram full of gags that even if a few are missed plenty will be left. But I must confess that, though I enjoy the result, it is a noisy one and leaves the spectator as limp as does a football match.

An unforeseen stupidity of the comedy-maker arose, however, but has now been overcome generally, also by a counterpoint device. I refer to the idiocy of literal casual relation between sound and image. This killed several otherwise good comedies. Harold Lloyd, for example, had in silent pictures twice climbed the outside of tall buildings, to the audience's delight. He tried it in talkies, for it to go as flat as a pancake. Why was obvious. In the silent film a humorous musical accompaniment

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helped us to laugh at his fears, but in talkies the noises he made—the grunts and puffings of a man desperately engaged in physical effort, the squeals and groans of a man in the grip of mortal terror—are such as we associate in our subconscious with powerful discomfort. Such sounds were far too powerful in their effect to allow us to draw from the scene a comic impression. Disney and Clair were the pioneers of the solution. Clair when he produced a comic effect by matching a scene of men trying to arrest the hero escaping with the treasure against the sounds of a rugger match; Disney before him when he showed that, while it is not funny to strike a drum and hear the noise of a drum, or to strike a lion's stomach and hear the noise of striking a lion's stomach, it is funny to strike a lion's stomach and hear the noise of a drum.

Nowadays almost no one would make that old mistake of Harold Lloyd's. Almost everyone is sensible enough now to choose his comedy noises quite as arbitrarily for comic effect as he would choose for comic effect the incidents of his script. This is, of course, not because people read the theoretical writings of myself (et al), but from a gradual unconscious absorption of the results of trial and error. There is one disadvantage, however, of "unconscious absorption." People are apt to fail to recognise analogous cases. And what they would not do in comedy, still persists in straight work. On "39 Steps" for example, when the waterfall scene was first recorded for me, the rush of water was raised and lowered in exact correspondence with the distance of the causal source of noise in the various shots. The odious result sounded like nothing in human experience but the turning-on and turning-off of taps. Only concrete experiment persuaded those concerned (*a*) that a loud waterfall noise was in any case important on the background of listening pursuers, however distant from the waterfall, to express their confusion and inability to hear the pursued; (*b*) that in any case, and even more importantly, a continuous roar was the only sound corresponding in human experience to the sound heard in the presence of a waterfall and therefore would be the only convincing one whatever the image cutting. An error of this kind indicates the importance of theory for every technician, of whatever grade, working on the creative side.

4. Limitation of Universality.

I do not mean to discuss here the polyglot difficulty. Neither the financial question whether increased domination of the home market through talkies compensates pecuniarily for diminution of foreign markets through talkies (interesting how the arrival of talkies and this consequence happened to coincide with the Fascist fashion for economic self-sufficiency as a doctrine). Nor the cultural consequence of the loss of interchange among national populations speaking different languages of different samples of their racial types acting similar stories, which freely took place in silent days (this consequence of talkies is perhaps the greatest cultural retrogression in the whole history of human communication; translation of literature, occasional visits of speciality drama groups to capital cities, neither of these ever approached the old silent film as a factor of international communication transcending frontiers and language barriers). I refer precisely to reduction of universality of appeal of a talkie even to its own language audience.

This we all foresaw. It has been fully realised and, I believe, is the strongest factor holding the talkies below the emotional impression level achieved by silents. It is clear that the more general the communication, the wider the audience to which it will apply. This principle has its particular application in films, where the major part of each spectator's reaction to a film lies in the possibility of his or her identification with at least one of the characters. Each of us identifies ourselves in our unconscious with any personable young man or woman to our taste and vicariously enjoys his or her adventure, success, and final congress with a member of the opposite sex. The field of such types with whom such subconscious identification is possible is tremendously limited by the powerful *particularisation* resulting from speech. This is true both in respect to actors (it is doubtful whether any talkie stars have quite the fanatic devotion earned by those of silent days: "The World's Sweetheart," Valentino Club, etc.), and to the characters they play. The sense of unreality roused in an English audience by hearing an English crusader at the siege of Acre say: "It's kinda rough on you, lady," would be nearly as strong if he uttered the full-blooded Cockney speech of to-day. Archaic speech would be as a foreign language to us, and to interpret passably to the modern audience such a "costume" period we have to take refuge in a colourless, unidiomatic, neutral phraseology that was never alive at any time.

Not only is a whole abundance of material, technically quite feasible, thus made perilously unconvincing to the talking picture, but where it is used it becomes less convincing in effect. No speaking characters, with the sharp individual reactions their speech-characterised personalities would arouse in us, could attain in a war film the universal force of the three soldiers in "The Big Parade." We know we are not John Gilbert when he speaks, but when he was silent, he or anyone else, we might have suffered in the front line in his skin.

Into the field of material unconvincing in speech falls any sort of fantasy (including the daredevilry of an acrobat hero (Fairbanks) or cowboy stuff and including slapstick). Consider in this connection also the enormous power of the musical accompaniment of silent films in suspending unbelief. Music, or any other rhythmic noise, by hypnosis helps to reduce audience resistance to the "truth" of play-acting. (Hence the popularity of train scenes in modern adventure films.) Recall the excitement and rise in tension in the film of "Treasure Island" in the silent (musically-accompanied) sequence where the boy rowed to the ship. Cowboys, or Fairbanks super-acrobatics, were just as incredible and silly in silent films, but the music made us forget it. Cowboy films are good still, for they retain a rhythm in the gallop of hoofs, but the Fairbanks type is dead. It is interesting too, in questionnaires filled in by ordinary film-fans, how many have gone off the wild incidents of Lloyd and other slapstick giants and comment: "ridiculous" "far-fetched," a judgment they would never have arrived at when the conflict with commonsense, instead of being fortified by natural noises, was masked by music.

5. Limitation of Sound.

Here is a category we did not foresee, and on which, O technicians, we have experienced our greatest let-down.

Listen to this: "the wealth of these sounds will be overwhelming. All the sounds of the whole world, beginning with the whisper of a man or the cry of a child

and rising to the roar of an explosion. The expressionism of a film can reach unthought-of heights. It can combine the fury of a man with the roar of a lion. The language of the cinema will achieve the power of the language of literature."

Thus Pudovkin, enthusing about sound films before he'd ever heard one. How little of it has been realised to-day. "The cry of a child," that's about all most of our sound systems will run to. You just try to whisper or roar and see if the sound man doesn't signal back "speak up" or "overshot."

The small range of sounds with which we are content is a disgrace upon a self-respecting body of creative craftsmen. Of course it is not primarily the technician's fault, it is the fault of those who fail to make demands upon him. It is none-the-less deplorable.

Our apparatus has been standardised too soon. I remember that in the early days of talkies Pudovkin and I were privileged to put questions to a Western Electric engineer with all the latest dirt from America at his fingers' ends. The poor devil thought he had run into a couple of amiable lunatics. Eagerly we asked such questions as : how could we get distortion in this direction or the other ? What sounds could the apparatus make that didn't exist in nature ? Could one invent and draw not previously existent sounds ? Naturally we wanted to know the full wealth of the material about to be placed at our creative disposition. The bewildered engineer tried to explain that he had just spent half a lifetime trying to perfect processes that would make distortion impossible and reproduce a limited range with exact fidelity to nature. When Dziga-Vertov brought his first sound film "Enthusiasm" to London, he went into the projection room to cue for sound and explained that at a certain climax the walls of the theatre in Moscow had physically shaken. Alas, the projection room he was in had just been fitted with latest type projectors equipped with a foolproof device to *prevent automatically* more than a certain level of loudness !

Nobody is suggesting, of course, that every film should shake the theatre. Audiences, a majority of which are sleep-loving, would soon cease to go to the pictures if so. But if we want to do even this we should be able to. It can be useful. It will be remembered that organ music was played at the stage presentation of "Mary Rose," when the heroine was engulfed by the island that likes to be visited. I am told that a special organ pipe was installed, the note of which was calculated to impart a vibration to each seat, enhancing the effect of eeriness in the unconscious of the spectator.

No one will deny that there is a whole series of effective noises we cannot fully render with our sound film apparatus. Whispers, shouting, revolver shots, any loud noises or climaxes, as of battle or tempest. No noise ever rendered for battle on sound apparatus equalled the force of impression of the Tivoli orchestra for "Big Parade." Or Meisel's music for "Potemkin." Although this film, mark you, was permitted everywhere in Germany, Meisel's music was in several regions forbidden as "staatsgefährlich." Actually ! Music a danger to the state ! Mark that, you sound technicians, when you feel inclined to be vain about some fiddling and realistic battle effect that leaves its audience as cold as Sunday mutton.

(*Continued at foot of page* 54.)

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Projection Theatre for the Independent Producer

In the heart of Filmland, at 86 Wardour Street, there has just been opened a private projection theatre, equipped with two "Magnet" Sound Projectors, with British Accoustic "Q" type Re-producer, working at 50 watts, and giving full range and normal sound reproduction.

One machine is fitted with a P.U. Two Sound Head and the other is double-headed, fitted with P.U. Heads.

The Mirror Arc lamps for the projectors are supplied by a Phillips Rectifier and consume thirty amps.

With a throw of 55 feet, a brilliant picture, seven feet by five, is shown on a beaded screen. The Crown Theatre seats one hundred people in comfortable tip-up seats. The whole theatre is tastefully lit and decorated.

On the same premises a number of private editing bays, fitted with the latest cutting equipment, are under construction, and will open shortly.

As these are attached to the theatre, they should be in great demand for the independent producer. Both picture and sound, as viewed by an A.C.T. representative, were exceptionally good.

The construction of the theatre is due to the enterprise of Mr. Victor M. Gover, an Editor himself, and he tells us that his personal experience has convinced him of the need of a theatre of this type.

Mr. Gover has kindly placed the "Crown Theatre" at the disposal of A.C.T., whenever required, in connection with its educational and other activities.

Lament of a Diehard (*continued from page* 53.)

I know about the theoretical difficulties. How possible sounds embrace a certain range, possible recordable and reproducible sounds a lesser range, and if we abstract one lot we have to do without another. But I say that we should find a way. Even if by having an entire duplicate set of recording and reproducing apparatus abstracting sounds in a second field of quite different vibration frequency, and having in big theatres projectionists who, expert creative artists, should alternate from one set to another in obedience to cues. Why not? Why shouldn't the big theatres with best facilities give a better performance than the small theatres in a network. It is grand to standardise, but craven to standardise at a level of effect below that possible in the same size theatres in silent days. Instead of an advance, that is for some a backward move. No one will deny that the talkie in a small theatre has in its sound more impressive possibilities than the old silent with its piano or pair of fiddles. I suggest that in a large it still has less than a big-scale orchestra.

Please let no one take these jottings as an effort at technical "setting the clock back," an advocacy of hand-weaving in the field of films. Talkie apparatus is an extension of human powers, neither capable of being renounced nor proper for renunciation. Rather are these remarks an effort to make us humble, to make us realise how inadequate as yet are our tools and our achievements, to shake us from that "pathetic contentment" that is a bar to progress.

Audio Frequency Signal Generator

We have recently had the opportunity of examining an Audio Frequency Signal Generator.

This signal generator has been designed to supply a demand for a pure sine wave source of an extremely portable nature for all testing and measuring purposes where such pure tones are necessary.

The instrument, complete with its batteries, is enclosed in a portable teak case, the dimensions of which are—length, 22 inches; depth, 8½ inches; height, 12½ inches; and the total weight is 40 lbs.

The L.T. supply to the valves is a two-volt battery of 20 ampere hour capacity, the total consumption of current being 0·7 amperes.

The H.T. supply is a 100-volt dry battery and the consumption of current is 4½ milliamperes.

The beat tone is produced by the interaction of two oscillating circuits, each oscillating at 60 kilocycles when the instrument is set at zero frequency.

One of these oscillations is supplied directly to the rectifier valve and the other supplied through a stopper valve circuit, partly to prevent pulling and partly to remove harmonics. The resulting beat tone, after the high frequency is filtered out, is then passed to a small power valve which will deliver about 4 volts across a 20,000 ohm resistance. Tappings, at 1 ohm and at 200 ohms, are supplied on this 20,000 resistance for the normal terminal condition in use on various apparatus. An external network can be arranged for any terminal condition other than these.

A valve voltmeter, specially arranged to use very little power and give no harmonic distortion of the output, enables the output to be kept level and also to give a measurement of the input into any apparatus.

On the panel are supplied adjustments for—

(1) Zero set of voltmeter.
(2) Zero set of frequency scale.
(3) Output strength.

The frequency scale is calibrated from 0 to 10,000 cycles and by special design a very open scale has been produced.

The instrument will maintain any frequency within 10 cycles for hours on end and much less variation than this will normally be experienced.

Harmonic production is negligible, being certainly less than 2 per cent. for all frequencies from 100 upwards and not exceeding 5 at 50 cycles.

The frequency scale itself should not normally vary but with violent handling or when valves have to be changed, a variation may be suspected, and if re-calibration is considered necessary this can be done in several ways.

The best way is available for those who have sound recording apparatus, when a frequency strip can at once be made, and the various frequencies recorded measured off under a magnifying glass.

A simple way, but perhaps difficult for some to do, is to tune up with the fundamental and all the audible harmonics of a tuning fork. A modification of this method is to calibrate against a piano. With phones on the head beat tone with piano notes can be obtained, and if the absolute frequency of one note, say middle C (usually about 262 cycles) is then obtained against a tuning fork, the whole scale can be determined.

(*Continued on page* 57.)

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From Theatre to Studio The Musical Director's Renaissance

By ERNEST IRVING, *Musical Director of A.T.P. Studios, Ealing*

SINCE pictures have been made to talk and sing, their competition with the Theatre has become progressively more formidable. The companies that tour the provinces with opera and operetta are fewer and less profitable, and London Theatres, which depended for dividends upon successful tours, have suffered in equal degree.

It is natural, therefore, that musicians—including composers, conductors, players and singers—should turn their attention to films, just as they had to "take notice" of the gramophone when sheet-music became unsaleable in the shops.

The Musical Director with Theatre experience should not, however, imagine the transition to be as easy as changing at Leicester Square, and perhaps an old hand who has been at one time or another Musical Director of nearly all the West End Theatres, may offer a few observations on the process of burning one's boats and arising Phoenix-like from the ashes.

* * * *

The Acolyte must not be disappointed if the immediate result is not too Phoenix-like. In the Theatre the Musical Director is the unquestioned chief of an unchallengeable department. Given his score and cast of artistes, he has to project them upon a willing or unwilling public as best he can, and nobody will interfere with him in the process. His principal difficulty will be to extract from a reluctant manager enough stringed instruments to prevent his orchestra sounding like the Band of the Loamshire Militia, and having achieved that, he must force the best out of his artistes, and keep on doing it, night after night. No one can stop him, or alter what he does, without turning him out of the building, and if he is wise, he will have provided against that by contract.

* * * *

In the Studio, none of these conditions are found. There may be the same difficulty over the strings—all managers seem to like attenuating the soul of an orchestra—but everything else is changed, and the methods of the Theatre fail hopelessly when transferred to celluloid.

The musician will find that his comfort and success will depend a great deal upon his studio's attitude to music. He will be lucky if he finds, as I did, a Director whose tastes are sympathetic with good music, as he will then be entrenched against the legion of Philistines for whom the highest form of musical art is embodied in the foxtrot. Anybody about a studio will hold himself free to offer opinions about the music, and the less the critic knows of the art, the more didactic are his pronouncements. Therefore, let the target thank his stars for a Director who can even put up with music which has any pretensions to class.

* * * *

As in the Theatre the Play's the thing, so in the Studio the Camera's the thing. And here our musician must make his first alliance, for here art must join with craft. Let him be sure that he has really shed his purple robes, for he has indeed much to learn. If he be intelligent and receptive—and not too conceited—he will acquire from his sound engineers and recordists (horrid word !) a knowledge of many curious facts of natural philosophy, besides the ordinary practicabilities of recording.

* * * *

Gallant warriors, the sound staff, always fighting with adversity, thrusting their "mikes" into the scene against massed attacks by the entire floor staff, and bringing to the unequal struggle the theories of a Kelvin and the practicability of a plumber. Some have fads about "commercial" sound, and will make that an excuse to lie glibly about "curves" to the unsophisticated musico, backing the swindle with blue-prints and equations.

If the Professor has remembered any of his mathematics, it is possible to turn the equations against the enginer and hoist him with his own petar, but the wiser man will arrive at some kind of compromise, as the sound man pursues the same object—good sound—and after all, he may be right.

* * * *

A more formidable hurdle is the cutting-room. Here he will meet a staff of expert craftsmen whose sole interest in life (in the Studio !) is celluloid ; its length and sequence, its permutation, combination, adhesiveness and divisibility. And the musician will be brought hard up against the fact that the development and form of a picture, which is the Cutting-Editor's sole concern, is entirely different from the development and form of a Symphony or a Fugue.

* * * *

They look askance at classical music in the cutting-room. Any irregularity of form, the most innocent rubato, or the mildest of rallentandi, is a dangerous excursion into an unknown dimension, involving the well-drilled frames in a haze of quadratic doubt. Woe to the temperamental composer if he hands to the Editor any of the surds and binomials of his hanky-panky rhythm.

He will learn to make the Guards' band march at 120 paces to the minute, so that every wag of the old shako may measure nine inches, and the cutters rise up and call him blessed. He will learn to think in footage, and hear in decibels, and to make provision in advance for the requirements of the Editor, so that the film when cut is rhythmical to the eye, as well as to the ear. This done, and the technique of the moviola mastered, he may become a welcome—even too welcome—guest in the cutting-room.

* * * *

Having secured the respect and co-operation of these two departments, he need fear nothing, and should set about enlarging his knowledge of the duties and difficulties of other sections. He should keep on frank (and, if possible, friendly) terms with the Production and Studio Managers, who will regard him sólely from the point of view of finance ; waste of time or money being in their eyes a heinous offence which will take a disproportionate amount of artistic ability to wipe out. To this end, much foresight is necessary not only to budget in advance for musical requirements, but to provide lines of retreat to cover change of plans by the Directorate, or accidents and failures in other departments.

* * * *

All this achieved, he will find his position in some ways less authoritative than in the Theatre, and his musical artistry more circumscribed ; but his duties will continue to be interesting because of their difficulty. He must march forward in a branch of his profession which is constantly changing and improving its methods, and must keep step with the other technical departments, which are undergoing similar metamorphosis. And that should keep him too busy to grumble—much.

A New Spotting Opaque

We have tested a red liquid Opaque sent us by Messrs. Johnson & Sons, the photographic chemists. This is a first-class material for blocking out purposes, and spotting pin holes; it flows easily from brush or draughtsman's pen, adheres to glass or emulsion, dries quickly and is quite opaque. Diluted with a little water it can be used to give high lights and cloud effects on still portraits, etc.; it can be removed by immersion in water, although it will not crack or shift from the negative. The containers which hold 1 oz., 6 oz. or 12 oz. permit the liquid to be well stirred. When dry, the opaque can be worked with pen or knife, without cracking.

May A.C.T. suggest that this opaque be made in black, as its adhering qualities and deadness to reflection would make it useful for camera and lens repairs.

K. G.

Emergency Fund

The General Council of A.C.T. has decided to start an Emergency Fund which will be used mainly for benevolent and legal purposes, and any other extraneous expense which cannot ordinarily be charged to general income.

Contributions will be welcome and all sums received acknowledged in the *Journal*.

As we go to press the first donation has come to hand:

Günther Krampf, ... £5 0 0

We are very grateful for such an excellent lead from an ace technician.

The Film Society

Reduced Subscription Rates for Technicians.

The Film Society is starting on its eleventh season which this year will be held at the "New Gallery." As usual, reduced rates of subscriptions are available to film technicians employed at a salary not exceeding £10 per week. One seat for each of eight performances may be obtained upon payment of 17/6. Full details may be obtained from Miss Mary Brown, Secretary, Film Society, 56 Manchester Street, W.1.

Audio Frequency Signal Generator (*continued from page* 54.)

After insertion of new valves and batteries a re-calibration of the voltmeter may be necessary. Instructions for doing this are given with the instrument.

Uses.

The use of this instrument for Amplifier calibration is obvious. A thermo-ammeter with transformer or a valve voltmeter can be used to check the output.

Other uses, such as Loud Speaker measurements; measurement of Inductances and Capacities, Filter Curves, Equalisers, etc., will be obvious to technicians.

Power Box.

An additional Power Box can be supplied to give an undistorted wave of 5 volts to a 500 ohm line for line measurements with the necessary input measuring instruments incorporated.

This instrument can be examined by any studio technician who may be interested, at the showrooms of Films & Equipments Ltd.

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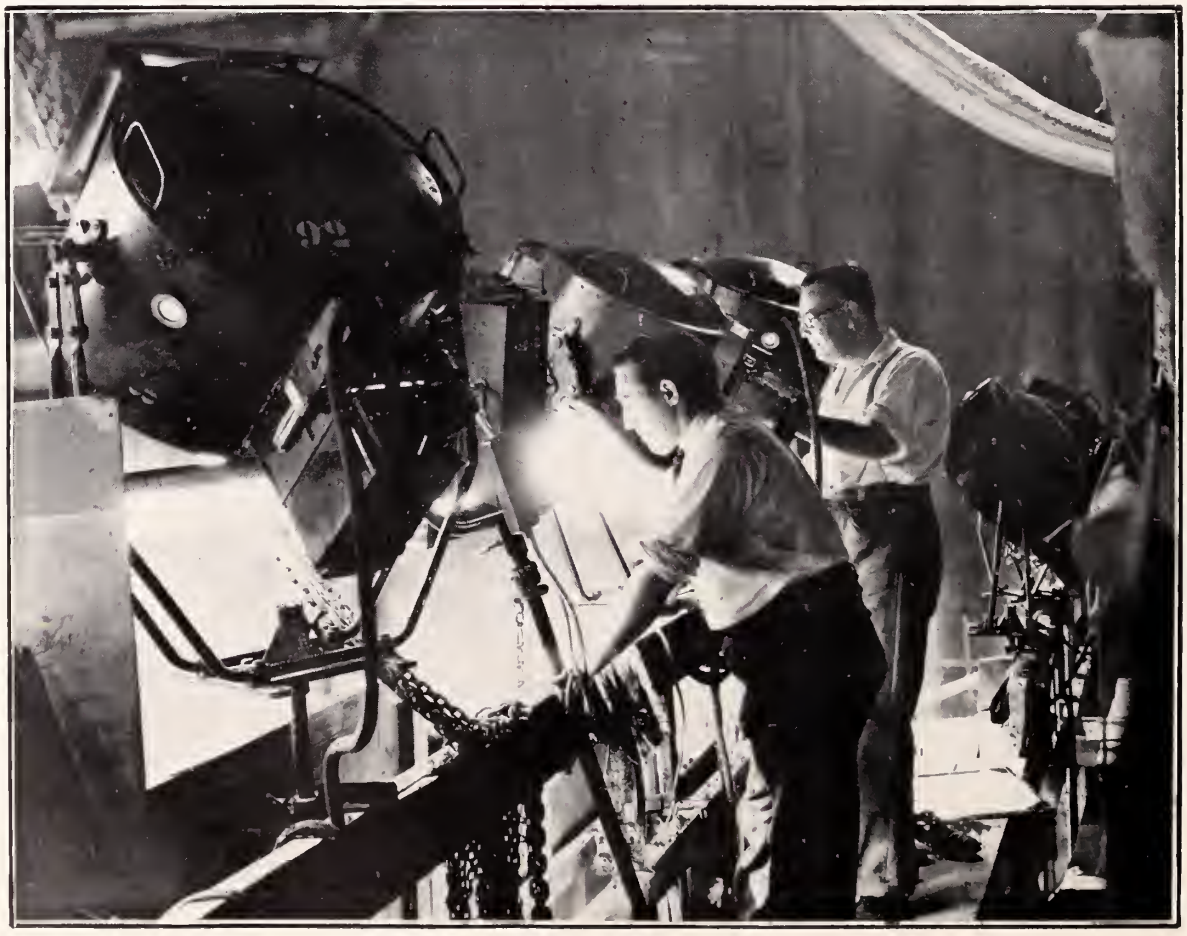
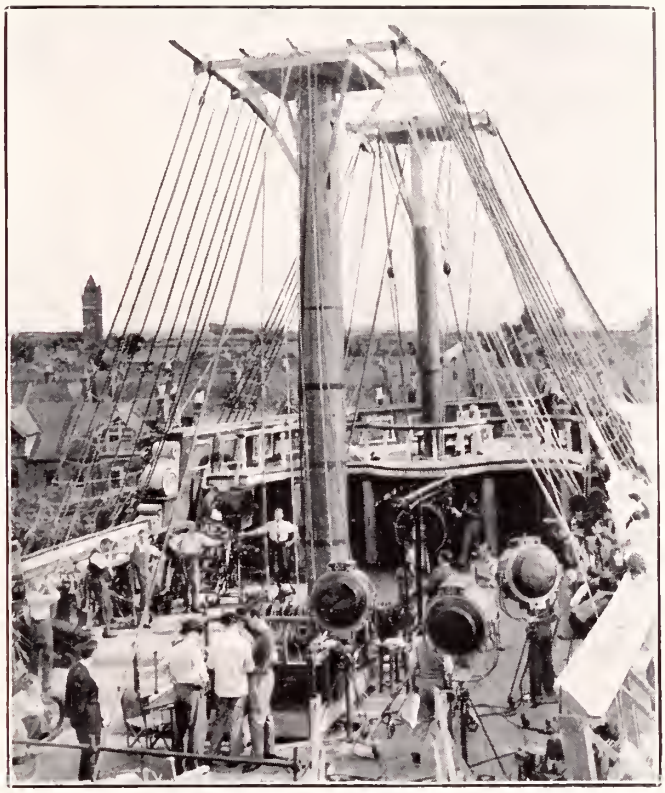
Still] [L. BEATTIE
(By kind permission, British International Pictures Ltd.)

Still] [Lewis Protheroe
SHIRLEY GREY in "THE MYSTERY OF THE MARY CELESTE"
A Hammer Production)



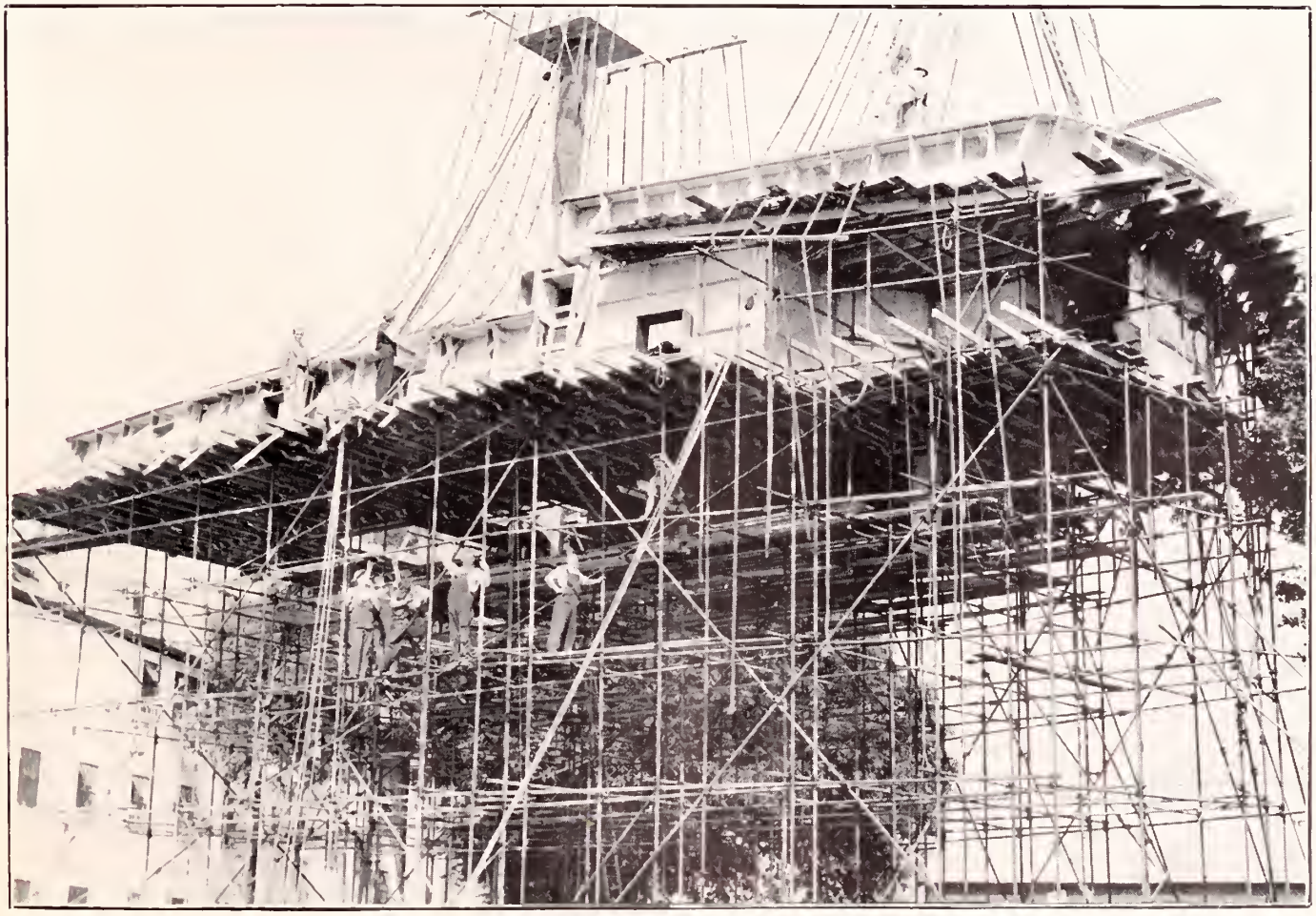
ON THE "SPOT RAIL" by JIMMY DALTON

Two aspects of the ambitious set, "H.M.S. Harpy," constructed at A.T.P. Studios, Ealing, for the screen version of Capt. Maryatt's "Midshipman Easy."



The set was built 50 feet high, above the roofs and tree-tops, thus avoiding the heavy expense of location work.

The Art Director was Edward Carrick.



Technique can be Overdone

By P. L. MANNOCK, Film Critic, *Daily Herald*

The following are the main points from a lecture given by Mr. Mannock to A.C.T. members :—

I AM not a technician. His job is much more complicated and specialised than mine. I don't think the technician's angle is one that I, as a critic, ought to be particularly interested in. It is not my business to tell the public how things are done, unless there is something definite to be gained. An art or music critic is not so concerned in the physical operation. He judges a thing as a work of art.

Film technicians, of whatever branch, should regard themselves as cogs in a wheel, very important cogs—one cog missing spoils the action of the machine—but they should always work in the spirit that they are doing something artistic, at the same time concealing what they are doing—art should conceal art. There is a tendency in films, no more in British than American, to let the technicians' tricks stick out a bit too far—the gadgets and dodges are invaluable, but they shouldn't be overdone. Technical advances should be subordinated to their proper sphere only, and be used to advance the speed and continuity of the picture.

I remember, soon after close-ups were invented by Griffith, a French technician introduced close-ups, which had a sort of vignette with a foggy oval round it—very nice as a portrait, but put as a close-up purely for the artistic effect, it simply struck an incongruous note. It was entirely artificial. I hope every cameraman has some particular vanity about his own particular job. There is plenty of room for personality, but I do not think that the cameraman especially should indulge in certain tricks just because technique and apparatus have improved immeasurably.

The last year or so I have noticed an extraordinary popularity for trucking shots. They are being terribly overdone. This sort of shot is obviously an advantage for following people around, but a certain director of my acquaintance was boasting the other day that he had shot a trucking shot that lasted about 270 feet, and thought it wonderful. There is no point in boasting about such a thing, unless it is helping forward the telling of the story in the quickest possible way. My impressions of these very long trucking shots is that the reverse happens. All quality is lost and a row of people simply lose their personality and the general effect is of a poached egg that has broken. This is a particular example of the danger of technicians using tricks, just because apparatus and ideas have become more imaginative.

Other effects which are being overdone are freakish dissolves and quick changes. But although these "wipes"

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are ingenious, now and again they are apt to distract. It doesn't matter in an unimportant frivolous picture so much as in a serious one, but I do think that these ideas lose their force by being overdone. You may, of course, find something that is funny in it for its own sake. Some years ago I remember Buster Keaton getting into a car in a picture, pulling the lever, and the background changed and he arrived at his destination. This was, of course, a joke, and speeded up the story, but that being done in a lighthearted way is very different to a really serious story.

I strongly suspect that the scenarist and cameraman work together. You may have a pork pie on a table and in a closer shot it turns to a bunch of roses in another scene. I think it should be discarded—it seems to be almost a stock idea now in linking things together. I don't know how the public look on this, but I think that they would appreciate something a little more creative, and it is possible to have more creative ideas.

I am very glad to notice that lighting from a cameraman's point of view is now enormously improved—it is not as good in this country as in America, naturally, but I think that we have at last got to the stage in this country that "lighting effects" should not be darkening effects. Some of the most artistic pictorial compositions consist of deep shadows, and I don't think they should disappear, but in my experience there are hundreds of times when shadow effects make it impossible to identify players and the whole story is thrown off the line. All these little gadgets have the danger that if you once take a false step with them you may lose the audience's interest, and I don't think there is any recipe for making film stories except holding the audience's interest.

The cameraman wants to put as many beautiful shots in the picture as possible, but I suggest that they have held up many a good film. I do feel, however, that there is a time and place to introduce a shot that is just beautiful for its own sake, but it should never occur in the critical state of a story. It can be legitimately used when there is a lull in the drama. I am afraid that my early training and slight recent experience in the writing side of pictures, coupled with the fact that I am a critic, makes me give the story of a film the greater importance. I don't think any factor—even beauty in a picture—should stop you from telling the story.

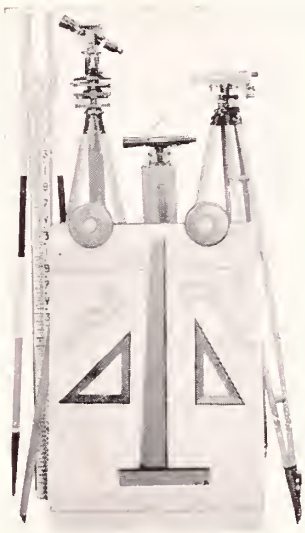
Here I come to my criticism of British pictures which is the loitering pace of action which maddens all critics and most audiences, and sends them to sleep It is terrible the way characters cross the screen, go to doors, don't say a word, sit down before they speak and 40 or 50 feet seems to be gone in no time.

I don't think these things can be corrected by the cutter. The whole problem seems to be a matter of proper economy of footage.

Art direction has become so artistic as to be unbelievable. I was on a set the other day—it was extraordinarily beautiful and full of chromium plating, etc. The director asked me what I thought of this set. I said I thought it was very beautiful and he replied, "Thank God! nobody can live in it," which was true. Art in films should be ahead of fashions, and should lead them. Yet I think it tends to become unnatural. I am not making any direct attack on art directors. I think British art directors are certainly better than any in the world, better than American, but are liable to become stiff and unnatural.

Another dodge is one which I wouldn't condemn, because it can be very clever and very useful. That is the

(*Continued on page 62, second column.*)



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Stratosphere Flight

Cameras Fall Over Eleven Miles

As reported in our last issue, two Bell & Howell Eyemo motion picture cameras were carried in the gondola of the balloon used in the recent National Geographic Army Air Corps Stratosphere flight, which began at Rapid City, South Dakota, and ended, as a result of a forced descent, near Holdrege, Nebraska. The two cameras fell with the gondola eleven and one half miles. One was in substantially good condition after its record plunge, the other slightly more damaged.

Captain A. W. Stevens, U.S. Army, together with Major W. E. Kepner and Captain O. A. Anderson of the flight personnel, had intended starting the cameras to make movies of the flight at an altitude of 60,000 feet, but it was at 60,000 feet that the balloon was disabled and began its descent, and there was no opportunity for movie making at that crisis, nor later.

"Had the flight continued," states Captain Stevens, "we would have exposed about 80 feet of film in the next hour and about 120 feet more in the succeeding hour. I also had three extra rolls of film to reload with in case we had time to make still more pictures."

The Eyemo cameras were selected for the flight, among other factors, because of their extreme lightness of weight—a vital point when every additional ounce of cargo would cut down the maximum height that could be attained.

One camera was equipped with a lens of six-inch focal length and the other a $3\frac{3}{4}$-inch lens. This was to permit taking pictures of different magnifications.

Two pieces of specially selected and carefully checked optically flat glass were mounted in the gondola, forming two portholes through which the cameras pointed. The cameras operated automatically following the winding of a heavy mainspring. This automatic operation was to permit the operator to attend to other matters between intervals when the mainspring had to be wound.

Inasmuch as long before the projected maximum altitude of fifteen miles was attained, it would be impossible for the human eye to cut through the tremendous depth of atmosphere and see the surface of the earth from the gondola, heavy red filters and film sensitised to infra-red were to be used. In this way the camera would be able to see what the human eye could not.

In addition to showing the appearance of the earth at different altitudes, the movies would have indicated the manner in which the balloon rotated as it ascended.

Regarding the condition of the cameras after their plunge, Captain Stevens states: "Except for two small dents in the case, one camera is substantially undamaged. The lens is all right, and so probably is the mechanism. The other camera had its side and front plates knocked off and the mechanism injured. Also the lens is missing. In searching through the wreckage, this lens could not be found, and it is probable that it was driven into the ground. Possibly some spectator afterwards took it without saying anything to anybody."

The two cameras are now in Washington, where an inquiry into all the details and circumstances of the flight is now in process. Following the inquiry they will be sent to the office of the Bell & Howell Company in Chicago, where they will be placed in the Company's famous motion picture museum.

Technique Can Be Overdone (*continued from page* 61.)

double exposure and triple exposure shots, with wild movement and rapidly changing dissolves, to suggest a quick period that needn't be acted as a scene. I am afraid those sort of things annoy the public if they are done beyond a few feet. I have listened very often to the opinions of members of the public and have come to the conclusion that they are slightly bewildered and therefore annoyed.

I hope nobody thinks I am making an attack upon the craftsmanship of any particular technicians. I am not. I am simply trying to unload the impression that I have of the little obtrusions, the little manias that technicians have. I don't think you have to know a lot about photography to see these things.

Sound is even more of a mystery to me than photography, and will always remain so. But I think that as sound has now had about seven years on the screen, we should have something a little bit better. It hasn't progressed the last six years very much more than it did in the first year. Sound, dialogue, music and effects are in general too noisy, and I make every allowance for faulty and defective installation in the theatre, which is so usual outside London. There is too much noise apart from dialogue in films. There may be some idea among sound recordists that it is good to be noisy. I know perfectly well it was understood when I was learning to play the piano that the loud pedal covered a lot of deficiencies, but I do think that music, for example, should be softer. The noise of waves on the seashore and battles and traffic and so on, needn't be so noisy. I find it something of a strain. The strain on my eyes is not anything so acute as the strain on my ears. In the old silent days the piano accompaniment was remarkably soothing. There was a placid effect in the cinema which I don't think has ever been recovered. I suggest that when in a theatre most people have a tendency to cough and sneeze, in the silent cinema the music always had the very useful purpose of covering up those distracting noises. That is the reason why music has persisted in talkies as an undercurrent to conversation. I don't think you want so much volume of sound for accompanying music as you generally hear, and I have a theory that it is very much better to tone it down. I find in British pictures much more than American that there is a carelessness in matching the sound track to the silent shots. I do think that with a little more trouble some of the glaring things you still see could be avoided—marching or dancing feet, for example, which don't match to the rhythm of the music. I think that it is one of the illusions of the screen which has got to be as perfect as any other illusion, and I am surprised that critics don't make more fuss about it.

Music for Social Functions

When making arrangements for dances and other social functions, we trust that any of our members who may be helping in an organisational capacity will bear in mind that the A.C.T. has members who are musical directors—and, of course, are also members of the Musicians' Union—who are qualified to satisfy any requirements in this direction. We shall be pleased to supply names and addresses to anyone interested.

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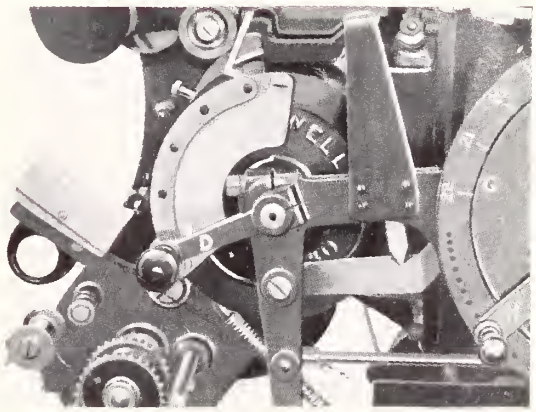

Right and left sound and picture printing shutter for Bell & Howell Model "D" Continuous Film Printer. C—Shutter control dial. D—Shutter control lever. G—Light control dial. H—Light control lever.

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Royal Photographic Society

Kinematography Exhibition

FULL details of the Royal Photographic Society's Exhibition of Kinematography are now to hand. The Exhibition is to be open from November 9th to 30th inclusive, at 35 Russell Square, and a comprehensive programme of lectures has been arranged during this period. In particular, it is hoped that every Cine-Technician will reserve Friday the 22nd, when a programme has been arranged by the A.C.T.—a measure of co-operation which will be appreciated by both societies.

Everybody, whether or not a member of the R.P.S., will be welcomed at the meetings, with the exception of those marked with an asterisk, which are reserved for Society members. The complete programme is as follows :

Saturday, November 9th, 3 p.m.,
Opening by Lieut.-Col. Moore-Brabazon, M.C., D.S.O., M.P., Hon. F.R.P.S.

*Tuesday, November 12th, 7 p.m.,
Optical Printing, by R. H. Cricks, A.R.P.S.

Friday, November 15th, 7 p.m.,
Discussion with Pictorial Group, R.P.S., "Pictorialism in the Kine-World."

Saturday, November 16th, 3 p.m.,
Sub-Standard Competition Films.

*Tuesday, November 19th, 7 p.m.,
Demonstration of New Apparatus.

Friday, November 22nd, 7 p.m.,
Programme arranged by Association of Cine-Technicians : Lecture on "Some Aspects of Sound Photography," by B. C. Sewell, Sound Engineer, British and Dominions Film Corporation, Ltd.

Saturday, November 23rd, 3 p.m.,
Criticism of Competition Film by Paul Rotha.

*Tuesday, November 26th, 7 p.m.,
To be arranged by Scientific and Technical Group, R.P.S.

Friday, November 29th, 7 p.m.,
Programme arranged by the British Kinematograph Society.

Saturday, November 30th, 3 p.m.,
Projection of Film sponsored by the British Film Institute.

The Competition referred to is, of course, the Sub-Standard Film Competition, which is being run in conjunction with the Exhibition. The competition is open equally to amateur and professional, and the entries in last year's competition reached an exceedingly high standard.

Features of the Exhibition itself will be a comprehensive display of apparatus, chiefly sub-standard ; stills from the latest productions of British Studios ; and a classified display of photographs which A.C.T. has assisted in collecting, showing the manufacture of a film, from the coating of the raw stock to the studio and laboratory work, and its subsequent presentation in the cinema.

B.K.S. Lectures (*continued.*)

Monday, Feb. 10th—Mr. Gillespie Williams, "Lighting for Colour Photography."

March (date not fixed)—Mr. Anson Dyer, "The Technique of Cartoon Films."

April (date not fixed)—Paper on "Polar Screen" by a representative of Kodaks.

A.C.T. Winter Programme

A.C.T. is busily arranging its usual winter programme of lectures and film shows. Full details are not yet available, but the following are the dates and such other information as is known.

The lectures will be held at the Pathé Theatre, 84 Wardour Street, by kind permission of Pathé Pictures Ltd., while film shows will be held at the "Crown Theatre," 86 Wardour Street, by kind permission of Mr. Victor M. Gover.

All the functions commence at 9 p.m.

Monday, November 4th, - - Film Show.
"Miracle of Life," by kind permission of United Artists' Corporation, Ltd.

Monday, November 18th, - - Lecture.

Monday, December 2nd, - - Film Show.

Monday, December 16th, - - Lecture :
"The Manufacture of the Cine-Camera and Apparatus," by a director of W. Vinten Ltd.

Monday, January 6th, - - Film Show.

Monday, January 20th, - - Lecture.
"The Manufacture of Film Stock," by I. D. Wratten, Technical Service, Kodak Ltd.

Monday, February 3rd, - - Film Show.

Monday, February 17th, - - Lecture.

Monday, March 2nd, - - Film Show.

Monday, March 16th, - - Lecture.
"Selling a Film and Publicity," by Robb Lawson, late Publicity Director, United Artists' Corp., Ltd.

Monday, April 6th, - - - Film Show.

It is hoped that all A.C.T. members will note the dates and further details will be announced in the usual way.

A.C.T. Members' Subscriptions

THE following extract from a letter to all members should be noted and those to whom it specifically applies should make their membership good immediately :—

"The General Council has decided to enforce in future the Rules of the Association with reference to lapsed members. The onus to pay his subscription is on the individual and he should not wait to be asked for it. If you are a free-lance, or work where we have no Studio Secretary, remittances should be made regularly direct to head office. Members cannot expect in future to receive the benefits of membership if not fully paid up with their subscriptions. Under the Rules of the Association any one who is five weeks in arrears, unless unemployed when no subscriptions are due, is liable to suspension."

British Kinematograph Society

Forthcoming Lectures

MEMBERS of A.C.T. are invited to attend the following lectures arranged by the B.K.S. Invitation cards may be obtained from the Association's office.

Monday, Nov. 18th—Mr. Louis Levy, "Fitting Music to Film," with musical demonstrations.

Monday, Dec. 16th—Mr. S. R. Eade of the B.T.H., "Film Driving Mechanism," with practical demonstrations of mechanical resonant filter circuits.

Monday, Jan. 13th—Mr. J. Okey, "Studio Design and Construction." (*Continued at foot of preceding column.*)

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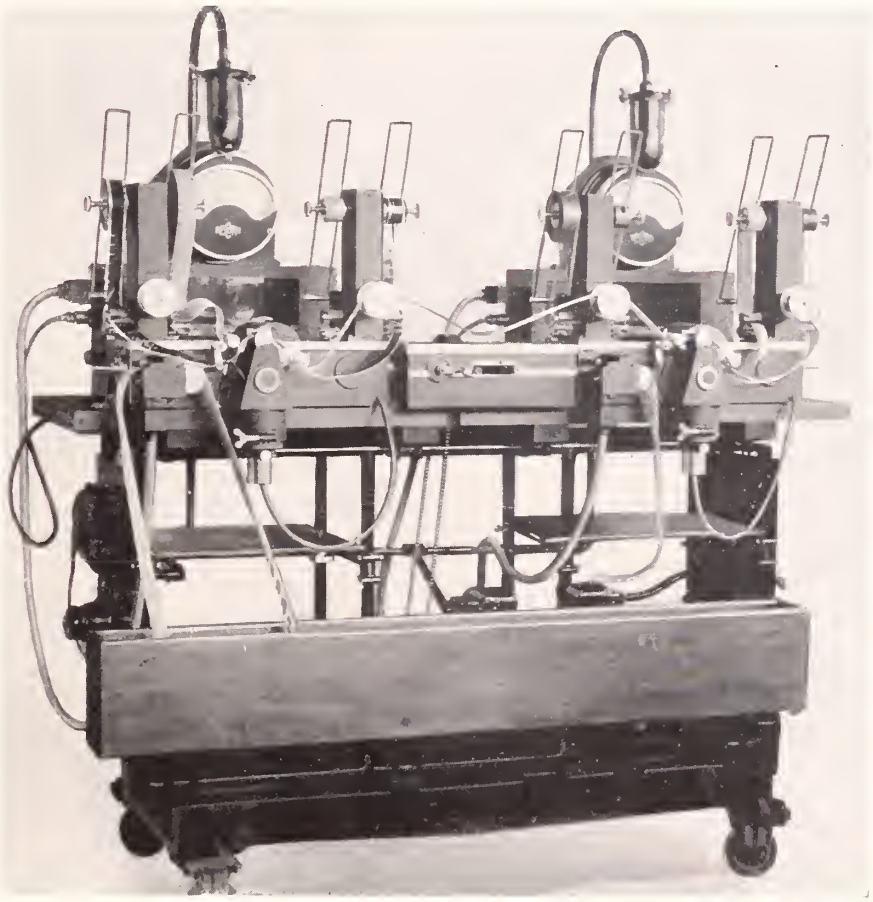

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Cinema Log

The First War Cameraman.

A great deal has been written in the Press lately about Film Pioneers. "The British Journal of Photography" quoted the following stories from a correspondent, Mr. W. Coyne, of Derby: "Although I did not view living pictures until 1901, I saw two cinematograph pictures taken years before which, if in existence to-day, would be unique—one in 1897 at Crete, which was then in the hands of an Army of Occupation supplied by the Six Great Powers, owing to a dispute between Greece and Turkey about the Island's ownership. On June 22nd the Sixtieth Anniversary of Queen Victoria's Accession, the Warships in the Bay of Candia, thundered a Royal Salute, and we on land fired a "feu de joie" and gave three cheers for Her Majesty. All the War Correspondents were there, and that famous one, Fred Villiars, was filming the scene.

Invented the Rostrum.

"The other occasion was on September 2nd, 1898, at 6 a.m., when we found ourselves forming the front face of the square, five miles outside Omdurman, awaiting the onslaught of one hundred thousand Dervishes.

"As soon as they were in range, hell was let loose, and when the fight was at its hottest I saw Rene Bull, the famous black and white artist, turning the handle of his Cine camera. He was not satisfied with the tripod, but had built a bamboo trestle ten feet high."

The First Pictures.

Another Pioneer was W. K.-L. Dickson, who filmed the South African War for the "Biograph Co." He was with Sir Redvers Buller, and filmed the battles of Colenso and Spion Kop, the Entry into Ladysmith, and was with Lord Roberts on his March to Pretoria. He also filmed the Orange River Colony annexation ceremony at Bloemfontein.

W. K-L. Dickson was indeed a pioneer, for it was he who invented the Biograph. He returned to England from America and started the Mutescope and Biograph Co. here. Their works were in Great Windmill Street, on the site of the present Windmill Theatre.

KENNETH GORDON
(Photograph by kind permission of Kodak Ltd.)

The Bio-Camera weighed nearly a ton. The size of the pictures taken were $2\frac{3}{4}'' \times 2''$, and as you filmed you perforated the negative. Dickson, whom we regret died last month at Twickenham, invented the Standard film as we know it to-day. The old Biograph positive had no perforations, as our illustration shows.

Strange as it seems, Dickson was an Englishman!

Positive of Biograph Film (actual size)

England the home of Cinema.

When the "Powers-that-Be" go looking for cinematograph genius for British productions abroad, perhaps they forget that we are the founders of the motion picture. Practically every progress made in the Art is English. Fox Talbot discovered photography. Muybridge invented Motion Pictures when he photographed the movements of a horse. Dickson invented the Kinetoscope and Biograph and took them to Edison. The English chemist, Sir W. H. Perkin, found Aniline Dye. Friese-Greene invented the intermittent motion used in all cameras and projectors. Sanger Shepherd invented Three-Colour Photography, the basis of modern colour methods. Smith invented Kinemacolor, the first commercial colour film process, and Lauste, the Frenchman, worked in England with our technicians in perfecting the Sound films as we know them to-day. Professor Fletcher, of University College, London, invented the amplifying valso.

The first Cinema cameras were built here by Prestwich, Williamson and Moy, and were exported throughout the world as were our films in these far-off days.

(*Continued on page* 68.)

PRECISION EQUIPMENT. No. 1.

AUDIO FREQUENCY SIGNAL GENERATOR.

FILMS & EQUIPMENTS LTD.

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Cinema Log (*continued from page* 66.)

English Technicians teach America.

Our Cameramen who went out to America were first-class workers and founded in New York, and later Hollywood, American photography as we know it to-day. Talking of the old Biograph Company, a subsidiary Company founded by them, is dealt with to-day by every sound technician. I refer to the Ever-Ready Battery Co. Many of the old Bio Boys are still working to-day, and are right up to the minute in their ideas. I refer to Emile Lauste of Kodak's; Jack Wiggins, Works Chief of Film Laboratories; A. M. MacDowell, of Agfa, and many others.

There was a photograph of some Pioneers in a Sunday paper—men who made cinema history thirty-two years ago. They were Arthur Cunningham, President of the Cinema Veterans; Cecil Hepworth, who was his own cameraman and the first to introduce a motor drive for a cinema camera, and to build and use a "Dolly"; R. W. Paul, who both produced films and built the first projector, and W. C. Jeapes, who synchronised sight and sound in 1908, and was the world inventor of the first Automatic Developing Plant.

Of course, there is Bill Barker, the first man to use thousand-foot magazines, and Williamson, who invented the Camera Gun to teach our airmen fighting, which is used by military authorities all over the world. Kodak's quality of negative stock is based and maintained by English brains. I speak of Wratten and Dr. Kenneth Mees. The famous "Vario" Lens, that changes focal length from two inches to six and three-quarter inches, gives Zooming close-ups without tracking, and is the optical marvel of the age, was built by an English technician, and the objectives ground in the Leicester works of Messrs. Taylor, Taylor & Hobson.

I could go on for ever. . . . .

Yes, we have had the brains. We still have them. Our Technicians need bow to none. It is up to every English Technician to demand his chance and when he gets it, see that by his skill and artistry, he consolidates that opportunity.

KENNETH GORDON.

A.C.T.'s Progress

SINCE publication of the previous number of the *Journal*:—

(1) Over 150 new members have joined the Association.
(2) New sections have been formed for Laboratory and Newsreel Technicians.
(3) A.C.T. has had to double its office accommodation and increased its staff by the engagement of an assistant.

Rotary Printer (*continued from page* 69).

A start mark, or punch hole, is made in the leader of the negative. When this hole is level with a line on the illuminated panel, a hole is punched in the paper; this is repeated on the back leader. These two holes are for starting and stopping the printer.

As the negative is wound over, the operator watches for a change in density; each time the density changes, a knob is turned to the desired light value and the paper perforated.

Of course only one grading machine is required for any number of printers. This Printer is a Vinten product.

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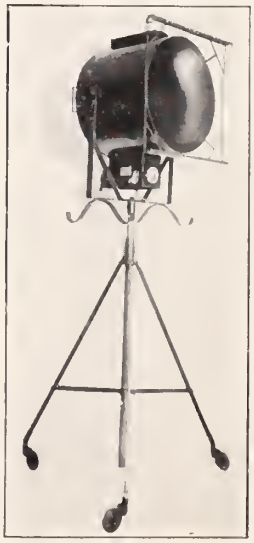

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Rotary Picture and Sound Track Printer

THE printing of Sound Tracks was found to be an exceedingly critical operation, and called for the same accuracy in machine design and construction as the Sound Recorder. Also, it was found that when the conditions existed of making both negative and positive run at a dead consistent speed without vibration, a better reproduction of the picture, as well as the track, was obtained. Hence the introduction of a Rotary Picture and Sound Track Printer.

This apparatus prints both picture and sound at one operation, under complete automatic control. An extreme definition is obtained, giving a softness to the picture and all the higher frequencies of sound, which is impossible with a step-by-step machine. These results are due to the perfect uniformity of speed given by a patent mechanical filter, and the accurate cutting of the sprockets to within ·0002″.

Light values for picture and sound are controlled by means of synchronised charts which dispense with notches and staples in the negatives. These charts are cheaper and stronger than the systems now used, and they last for a hundred prints.

The printer stops automatically at the finish of the run; thus a saving of time, wear to negatives and raw stock is effected. The human error in "framing" is eliminated.

The machine can be run as a single unit, or two or more can be coupled together, the mute picture negative being run on one, and the sound track on the next, with the positive over the two, giving a finished 1000 feet sound print in ten minutes.

The take-offs and take-ups are integral with the machine. All the gearing is totally enclosed. The machine is chain-driven through a clutch, thus avoiding risk of slip and waste of stock when starting and stopping.

The exposure gate is of the curved pattern, hardened and ground to a high finish. The curve is very carefully calculated to ensure perfect contact with the gate. A slight tension on the positive keeps the two films in perfect contact without any tension being applied to the negative. Three gates are supplied with each machine, for silent, mute picture and sound track.

The overall length of each unit does not exceed two feet.

The Automatic Light Control is an entirely new departure for controlling the light value on the Rotary Printer. Batteries are not required.

The negative is not used as an insulator between electrical contacts, or for operating contacts of any description; thus wear and tear to the negative due to operating the control is nil. Should the negative be notched or stapled, as is required by other methods, it does not affect the working of this control.

The picture and sound track are a better reproduction than that obtained from any other make of rotary printer, this being due to the immediate change of light values, of which there are 21.

The control is on a parchment paper 70 mm. wide, and runs in synchronism with the negative; this will operate the printer effectively up to 120 ft. of film per minute.

The Negative Grading Machine is for producing the perforated chart for use with this automatic control.

The negative is passed over an illuminated panel, and at the same time the 70 mm. wide parchment paper is passing through a perforating gate at one-hundredth the speed of the negative; thus 10 ft. of paper is equal to 1000 ft. of negative.

(*Continued on page* 68.)

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* * * *

America.

An American Naval Commander has patented a method for permanising motion-picture film . . . why ?

Federal Government in the States is to have a film survey. Reason ? . . . Economic and historical . . . so what ?

2,000,000 feet of old film—the celluloid history of Hollywood—taken back to the archives of the Museum of Modern Art Film Library in New York . . . . we know a lot of films that should be there now . . . . or HAS the Curator been careless and let some out on release.

Hollywood report says that Frank Brisson—brother of Carl—will handle Mitchell Camera sales and services in England.

Erpi and R.C.A. may be in the Law Courts soon . . . . more patent troubles. . . . .

America following England in shewing films on railway trains. . . . Travellers getting blasé.

New York opening a 24-hour cinema . . . possibility of shewing the private life of an operator . . . . if any.

* * * *

China.

Informed that Chinese Studios get organised about 5 o'clock in afternoon and work until late hours in the morning in order to get their pictures when everybody is in the right mood . . . . must have spies in England.

400 cinemas in China . . . 110 wired for sound—the rest just for power . . . damned clever these Chinese.

102 pictures produced last year . . . 25 fairly good . . . the others ? . . . why bring that up.

* * * *

Ontario

Government turning studios in which they have produced £383,000 worth of useless films into Gymnasia. . . . Mens sana in corpore sano. . . . But A.C.T. not teaching gymnastics this winter.

* * * *

Austria.

Vienna busy with ten productions at the moment . . . we're not doing so badly ourselves.

* * * *

Four by Two.

Pabst making "Faust" as a talkie . . . but in Hollywood this time. There is no rumour that Hitler is to play Mephistopheles.

* * * *

Italy.

60 epics planned . . . some bi-lingual and some tri-lingual . . . Abyssinian versions unlikely . . . pax vobiscum.

* * * *

Colour.

London Films to use Technicolour . . . but not this year.

Presently negotiating for a laboratory. Garry Schartz may take charge. Difficulty will be to dispose of dye residue.

24 colour photography patents taken out in the last four months. . . . .

"Dufay" has made a hit in Hollywood. . . . England right into the Lion's den at last. . . .

Rouben Mamoulian says : "I have no doubt that colour is here to stay." Foresight . . . what !

* * * *

Publications.

Adrian Brunel is writing another book on the "business" . . . promises to be a Super, with contributions by some of our leading technicians. . . . .

While in America, Lewis W. Physioc, cameraman, has written "From Script to Screen" . . . who said cameramen weren't educated.

* * * *

Home News.

"Not to-day Josephine Productions unlimited" did not go on location last Sunday . . . but went to-morrow. . . . . Director Karl Freund says that the unsung hero of the screen is the cameraman. This crew at any rate say —at least up to the time of going to Press—that the unsung hero is the Cashier.

Westminster scavengers can't tackle clean up of Wardour Street . . . job too big . . . A.C.T. rumoured to be taking over.

Kodaks have brought out a new filter . . . specially for killing the hot spots on beer glasses. . . . Wardour Street annoyed at this poaching on their preserves.

Well-known British Studios contemplating opening dormitories to save the staff wasting time in travelling back and forth to their beds . . . we should worry.

Heard of the wag who sold bundles of nails in cans as short ends . . . there now, can you imagine that.

* * * *

Answers to Correspondents.

Electrician, Elstree—No, B.I.P. did not make the "Gold Rush" and there is no truth in the rumour that their next film will be located in Canada. Klondyke is a place and not the name of a Bank Manager.

Apprentice, Wardour Street—The L.C.C. have not opened a school of cinematography. Yes, their Fire Brigade still put out fires. * * * *

Things We Want To Know.

The name of the person who dropped his fish and chips in a laboratory tank . . . . and why ?

The last time a pillar of Wardour Street touched his toes.

Why Wardour Street is reported to be the *only* street that is shady on both sides ?

How to start a limited liability company ?

The real reason why a Vice-President and Secretary went to Brighton ?

Why American time is always five hours different in Wardour Street ? * * * *

Press Cutting.

"One interesting comment on conditions at Cricklewood we heard from Doris Arnold, . . . She said it was nice working there, because everybody in the studios was polite and you never heard any bad language. Not all film studios are like that."

—*The Radio Times*, October 11th, 1935.

Prospectus of A.C.T. Continuation School for the sons and daughters of gentlemen and technicians may be available shortly. * * * *

Competition.

"Sticks Nix Hicks Pix."

"Variety" headline.

No prizes offered. POG.

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Recent Publications

Popular Television, by Barton Chapple, B.Sc. (Hons.), A.M.I.E.E., etc. Pitmans, 2/6.

CAPTAIN WEST, in his article on Television in the last issue, said: "much can be picked up from reading, if it is the right sort." Here is the first book of that description written by a recognised authority. The author writes from experience as one who has been in Television since its infancy.

The book lucidly explains the elementary principles of Television, the older methods of transmission, the methods that will be used in London's first Television station, and forecasts the type of programmes we may expect. From this one can judge if the film technician will meet with any serious opposition in this new form of entertainment.

Why are short waves necessary for High Definition Television? How far can one receive pictures from the source of transmission? What will the receiver be like? All these questions are answered in full.

There is a very interesting section on big screen Television for the Cinema, in which the author describes how, for example, the "Derby" could be televised and shown on the Cinema screen two or three minutes after it has happened.

It is interesting to note also that according to the author there are two reactions to Television in the film world; on the one hand it is regarded as a "wholesale menace" and on the other hand "good in a co-operative manner." His only comment on the current situation is "only time will tell what will happen." Perhaps a very guarded comment, but one feels safe in the opinion that a long time will elapse before Television will become a serious rival to the Cinema screen.

The last part of the book deals with the uses of Television other than for entertainment, such as for fog penetration, televising messages and education.

The book is filled with useful and interesting information both for the layman and technician.

By his vivid style and avoidance of technical jargon, the author makes Television appear much less complex than the knowing ones claim it to be.

OBSERVER.

How to Enter the Film World, by E. G. Cousins. Introduction by Alexander Korda. Allen and Unwin, 106 pp., 2/- nett.

MR. COUSINS' is a valuable and much-needed book. Its information is concise and trustworthy, though it is regrettable that there is no mention of A.C.T.'s Employment Bureau among the list of agencies at the back. However, we can welcome it, as Mr. Korda does in his introduction, as the handiest answer to that question we have all periodically shrunk from—"How can I get into films?" Mr. Cousins deals with each section of the industry in turn, and is as discouraging as he should be to the merely romantic-minded aspirant.

For A.C.T. the book has a special interest. Mr. Cousins declares his book to be written "partly in the hope that it will help in a measure to provide the studios with one of their greatest needs—some regulation and direction of the supply of talent." For truly there is no *satisfactory* way of entering the industry. Nepotism, of course, is rife, despite the resentment with which, as he points out, it is regarded in the studios. And like him, we are "appalled by the number of people having no connection whatever with film production, who regard it as a convenient dumping ground for the incompetent, the dull-witted, the lazy and the social misfit."

Such apprenticeship schemes as have been tried have rarely been courses of training in any real sense, but in most cases merely a means of obtaining for the "apprentice" a temporary sojourn in a film studio. I do not deprecate sincere efforts on the part of various companies to train new people, but urge that the problem is one to be tackled on an industry-wide scale. The efforts to date have been local and unrelated. The Regent Street Polytechnic has a course in cinematography, for example, but there is no guarantee for the student of eventual entry into the studios. The Apprenticeship Committee of the A.C.T. have got as far as laying down certain principles as the necessary basis of any apprenticeship scheme (published in our last issue). And, as I have said, several studios have made individual experiments. What is needed is a co-ordination of all these efforts, for technicians and the companies to come together, through their appropriate organisations, in order to decide the structure of apprenticeship and then to co-operate with reputable educational bodies such as the Regent Polytechnic to ensure that courses in cinematography shall keep pace with studio practice. The number of students enrolled for such courses could be controlled in terms of the need of the industry for recruits and the successful students assured of a trial, at least, in the industry.

"There are," says Mr. Cousins, "two doors to the studios—front and back." I hope we shall before long firmly bolt the back door and install a sensitive turnstile at the front.

SIDNEY COLE.

The Journal of the Association of Cine-Technicians

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"Very good, Sir. I'll send my **MESSENGER** for the films you intend cutting."

◇ ◇ ◇ ◇

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"Thank you, Mr. Norman, that's exactly what I require. Please send across for my despatch sheets."

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THE JOURNAL OF THE ASSOCIATION OF CINE-TECHNICIANS

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The Quota Act

A Study and Criticism of the Cinematograph Films Act, 1927

By GEORGE H. ELVIN

Secretary, The Association of Cine-Technicians

We all know that the Cinematograph Films Act, 1927—more familiarly known as the Quota Act—is the father of "quickies," but few of us trouble to investigate further. It is generally agreed that the Act has been mainly responsible for the successful development of the British Film Industry and *ipso facto* for the provision of employment for British persons in the film industry.

The Act expires on September 30th, 1938. What then? Shall we advocate its renewal or agitate for its demise? Film workers generally, I am confident, trust for its renewal, but, if so, there must be many clauses revised and additional ones added if it is to be generally commendable to them.

What are its main provisions, its strength and weaknesses?

Quota Stipulations

First in importance comes the principal stipulation that a certain percentage footage of film rented or exhibited must be British. The percentage has increased on a sliding scale from 5% for exhibitors' quota and 7½% for renters' quota in 1929 to 20% for both classes in 1936, at which level they will remain until 1938. We do not quarrel with these provisions, although certain sections of the industry may press for revisions of the actual percentages.

GEORGE H. ELVIN

Definition of British Film

The definition of a British Film is satisfactory. Clause (4) is the one that particularly affects British technicians and prevents the wholesale importation of foreign labour. The large proportion of manual and semi-manual labour required on a production must have saved many a company falling foul of this clause and it is even rumoured that a "star's" salary has on occasion been suddenly increased in order to keep on the right side of the Act. The substitution of "technical labour" for "labour" in line 2 of clause (4) would probably commend itself to British technicians.

A British film is defined as one complying with the following requirements:—

(1) It must have been made by a person who was at the time the film was made a British subject, or by two or more persons each of whom was a British subject, or by a British company;

(2) After the thirty-first day of December, nineteen hundred and twenty-eight, the studio scenes must have been photographed in a studio in the British Empire;

(3) The author of the scenario must have been a British subject at the time the film was made;

(4) Not less than seventy-five per cent. of the salaries, wages and payments specifically paid for labour and services in the making of the film (exclusive of payments in respect of copyright and of the salary or payments to one foreign actor or actress or producer, but inclusive of the payments to the author of the scenario) has been paid to British subjects or persons domiciled in the British Empire . . . . (here follows mention of exceptional circumstances which may reduce the percentage to 70%).

Apparent Success of Quota Act

More than 36,000 million feet of registered film were projected on the screens of cinemas in Great Britain in the year ended 30th September, 1934. 9,500 million feet were British; nearly twice the statutory footage of the 1934 quota of 15%. This figure is exclusive of news-reels, educational, advertising, interest and certain other types of film, which do not come within the quota liability.

Therefore the Act has apparently achieved its object. Whether the British film industry is now sufficiently established to continue its present output if the Act is not renewed is problematical. Probably not. Further, the removal of the Act might well lead to a drive for reduced production costs, as a means of successful competition against foreign films, the first economy of which might well be reduced salaries and wages for employees.

Abuses of the Act

The Act tends towards low salaries and bad working conditions for those employed by the smaller companies in the production of "quickies." Renters engaged on such films generally cause technicians to work excessive hours—fifteen hours a day or even longer is not unusual; a seven-day week is a general practice; meal rests are conspicuous by their absence or remembered for their brevity; and economy is the watchword. The less a film costs, so generally is the profit proportionally greater.

Quality of films naturally suffer as a result of the sheltered market. Mr. S. Rowson at the 1935 C.E.A. Conference expressed the opinion that certain British films were bad, simply because no effort had been exerted to make them otherwise. He quoted figures to shew that 25% of British films were adversely reviewed, as against only 7½% of foreign. A British technician tells of the retort to his criticism of the set constructed for his film. "What does it matter, anyway. The film will never be shewn." Such a state of affairs is all wrong.

A Studio Manager informed me only recently that, while the saving of a week's floor rent is uppermost in the minds of most renting companies, actual results frequently show that overtime and other additional expenditure often exceed in cost an extra week's rent. The old story of penny wise and pound foolish, ignoring altogether deterioration in the quality of work which must follow from continuous long hours.

Possible Remedies

What remedies of these abuses are possible? To quote Mr. S. Rowson again, he stated to the C.E.A. that one possible remedy for the present abuses of the Act would be a stipulation that a certain minimum sum—between £10,000 and £12,000 exclusive of the cost of the story—should be spent on a British film before it could receive a quota qualification. On the whole a sound suggestion. I should, however, go further and stipulate how part of this money should be spent. There should be some provision as to the salaries, hours and general working conditions of employees, and particularly some safeguard to retard the operations of "fly-by-night" companies, of whom there are far too many in, or late of, the film industry, leaving behind a considerable sum of unpaid salaries.

Most of the British films which have been made under reasonable conditions have proved a box-office draw and have on occasion established box-office records. There is, indeed, a call for some kind of official certificate of competence to be held both by the producer and senior technicians. Doctors, lawyers, etc., cannot practice without registration—thus ensuring a certain minimum professional standard—and a similar registration in the film industry appears reasonable and advisable.

The present Act provides for a committee to advise the Board of Trade on the administration of the provisions of the Act. It is at present composed of representatives of (*a*) film makers—employers and not employees, (*b*) film renters, (*c*) film exhibitors, and (*d*) persons having no pecuniary interest in any branch of the film industry. As the Act, however, covers many matters which directly affect employees, and it is hoped that the next Act will include still more clauses of this nature, it appears both reasonable and advisable that the Committee, and its powers, should be extended. The film industry is responsible for the employment of a very large number of persons and, as it is their livelihood which the Act aims to protect, I feel that employees' representatives, appointed through their respective organisations, should be on this Committee.

In conclusion, I trust we will keep the Quota Act, but when it is renewed its provisions shall be tightened up in an effort to prevent its present abuses and shortcomings. There should be stricter supervision to ensure compliance with the Act and failure to do so should carry far greater penalties than at present.

I trust that the *whole* of the film industry will be consulted in the near future to ensure that the Cinematograph Films Act will be continued to benefit the British film industry generally and to make credit titles something to be sought and coveted rather than, as in certain cases at present, a questionable honour.

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Income Tax

It has been brought to our notice that the treatment of film technicians with reference to Income Tax allowances is not uniform. The Association has consulted H.M. Principal Inspector of Taxes on the matter, who asks us for specific details of any anomalies, when he will be pleased to meet representatives of the Association in order to discuss regularisation of the whole matter.

Will any member who has had difficulties please inform us of the nature of them? We should also like to have details of any apparent discrepancy between treatment in different districts.

Some Aspects of Sound Photography

B. C. SEWELL

Précis of Lecture, arranged by The Association of Cine-Technicians and delivered to the Royal Photographic Society, November 22nd, 1935.

It is well known that sound consists of pressure waves. Any audible sound can be represented by a wave-form, that is a graph in which pressure is plotted against time. Any continuous, or sustained sound, although this corresponding wave-shape may be very complex, can be represented by a number of pure tones, or sine waves, such as those given by a tuning fork. A single continuous sound, such as a vowel sound in speech or singing or a musical note, is composed in this manner of a number of frequencies of different amplitudes, or strengths, such that each frequency is a multiple of the lowest frequency present. This lowest frequency is the pitch of the note, and it is the others, the harmonics—or overtones—which lend to the sound its distinctive nature. Different musical instruments

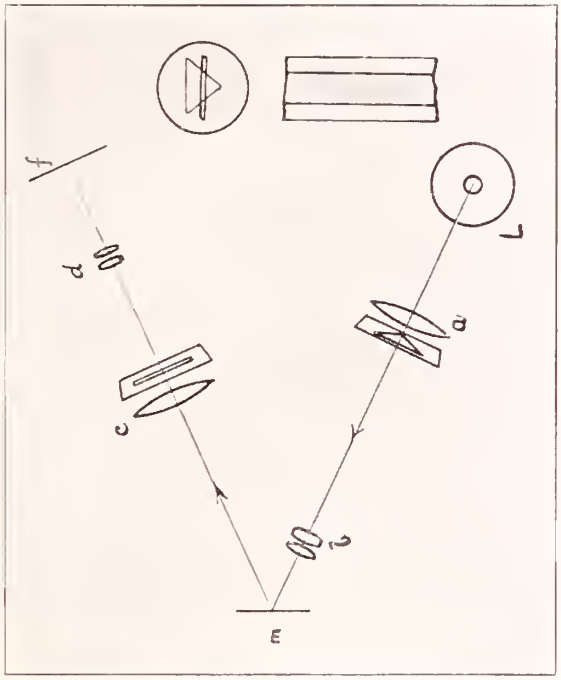

Fig. 1.

are recognisable from one another by reason of the differences in the number, amplitudes and frequencies of the harmonics which they produce. The problem of recording, then, is to translate into terms of photographic density a range of frequencies of pressure vibration. The range to which the ear responds extends from about 16, to 16 or 20 thousand cycles per second, but this range is not fully covered in recording. About the best that is done in practice is to record without appreciable attenuation the range between 40 and 8 or 9 thousand. The majority of recordings do not go as high as this, and so fail in some measure to give a faithful rendering of the original.

In order to produce exposure changes on film we must have a kind of camera, which includes a light modulator. All present-day modulators are worked by electrical impulses, these being obtained by a microphone and amplifiers giving an electrical output in which the current variations are an exact copy of the pressure changes at the microphone. By careful design this can be achieved within the practical limits of frequency already mentioned.

The different kinds of light modulators can be classified under two main headings. Firstly, the variable area, or variable width type. In this the exposure is in the form of a line down the track, the width of which varies in accordance with the impressed signal. The remainder of the track width is left unexposed. The other type is the variable density, in which the exposure of the track is constant across the width, but varies along its length. If a narrow slit of light is projected on to either of these tracks the amount of light passing through the film will depend upon the transmission value of the track at that point, and if the film is moved with uniform velocity past the slit, then the changes in light transmitted will depend upon the variations in exposure of the negative, and so upon the original signal input to the modulator. These changes in transmitted light are translated back into electrical terms by means of a photo-electric cell. The essence of photographic sound recording consists in ensuring that the electrical output from the photo-cell shall be an exact copy of the input signal to the light modulator in the recording camera.

A diagram of the more usual type of variable area modulator is shown in Fig. 1. The lamp filament L is focussed on the vibrating mirror M by means of condenser A and objective B. In front of the condenser is a trian-

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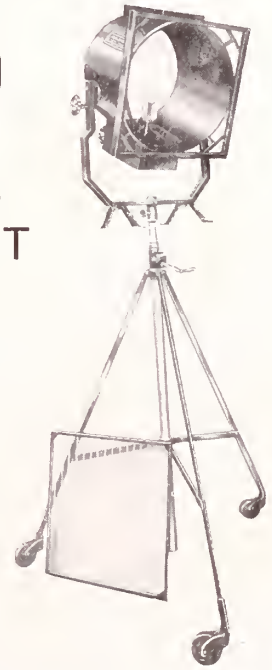

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gular aperture which is focussed accurately on the rectangular slit by the objective B. M is an oscillograph mirror, which vibrates in accordance with the impressed signal, and so varies the length of the illuminated portion of the slit. The slit is focussed on the film and so produces

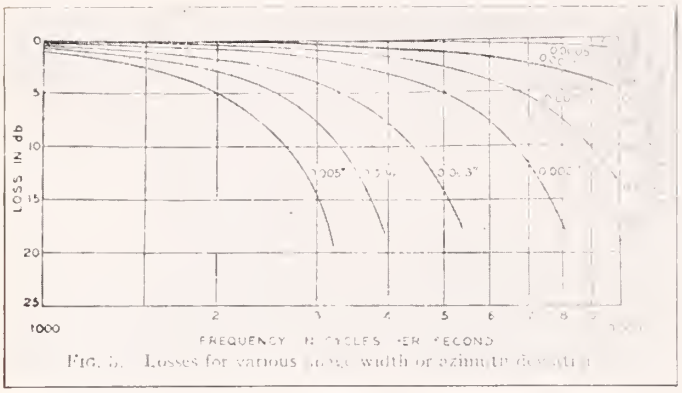

Fig. 2.

on the negative the dark line of varying width which was seen in the first slide. With 100% modulation the width of the exposed line varies from zero to 84 mils.

The optical set-up here produces a reduction in size, and the width of the image in the direction of travel of the film is usually $\frac{1}{2000}''$. This dimension should be as small as possible.

In variable density systems a narrow slit is also imaged on the film, but exposure variation is accomplished in one or other of two quite distinct ways. Either the intensity of the light falling on the slit is varied, or the width of the slit is varied, the intensity remaining constant. Intensity variation is usually achieved by means of a glow tube—a special adaptation of the neon-lamp principle. The method of slit width variation is the more important, however. The slit in this case consists of a light metal ribbon doubled round and stretched on a bridge, the assembly being generally known as a light valve. The gap between the ribbons is capable of exact adjustment and the tension is controllable. The ribbons are placed in an intense transverse magnetic field, so that a current round the ribbon circuit causes the two parts to open, or close, according to its direction and strength. The ribbons are focussed on the film by means of an achromatic objective giving an optical reduction of two to one. The intensity of the image is thus constant, but its width varies from zero to $\frac{1}{2}$-mil., or whatever the dimension may be. Exposure thus varies on a time scale, a given point on the film taking a longer time to pass through a wider image (when the ribbons are open) and so receiving more exposure.

It will have been noted that the optical slit, focussed on the film, is a feature of all recording systems. Its nature and effects will now be considered in more detail. We have taken the frequency of 9000 cycles per second as the upper limit of practice, and simple arithmetic shows that at a film speed of 90 feet per minute this corresponds to a wavelength of 2 mils.—2 thousandths of an inch. Now just as fine detail cannot be drawn with a blunt pencil, so short wavelengths cannot be recorded with a wide slit image. The same applies to reproduction.

Fig. 2 shows how high frequency loss is affected by image width. It will be seen that at 9000 cycles the loss is reduced from 10 to 1 D.B. by reducing image width from 1·5 mil. to ·5 mil. The actual losses are always a little greater than the theoretical figures, owing to imperfect image formation, the effective image width being thus somewhat greater than the calculated value. The most modern practice consists of a $\frac{1}{2}$-mil. slit with a specially corrected objective, giving an effective image width only slightly in excess of $\frac{1}{4}$-mil. Since most recording is done on positive type emulsion, the lens correction should be most effective in the upper blue and violet region, and not carried out by coincidence of blue and yellow images.

The considerations relating to processing of the sound track have now to be examined. This part of the subject is more interesting from the standpoint of variable density and will be so considered.

There are three definitions which have first to be made.

The transmission (generally expressed as a percentage) of a photographic image is the proportion of the total light incident on the film which is transmitted through it.

Density is the logarithm of the reciprocal of the transmission. Hence a transmission of 50% (or ·5) is equal to a density of the log. of 2, which is ·3.

If a series of exposures of different values are made on a plate or film, and the densities produced after development are measured, it is found that the density is proportional to the log. of the exposure over a limited range. The factor of proportionality is called the gamma, or contrast factor, and it depends on the nature of the emulsion and the degree of development. The curve produced by plotting density against log. of exposure is called an H. & D. or Hurter and Driffield curve, and three typical examples are shown in Fig. 3. The two steep ones are of positive

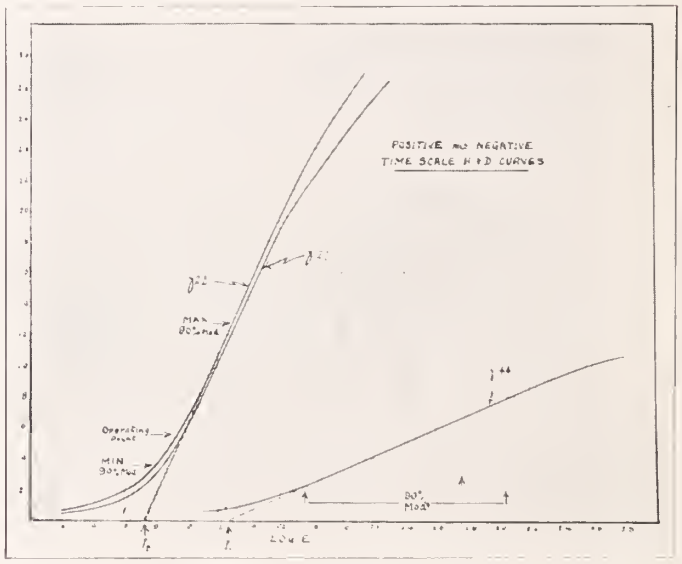

Fig. 3.

type emulsions and development, and the one with smaller slope is a record of the type of negative development used for variable density recording. These curves are produced with the aid of an instrument known as a sensitometer, which is an apparatus for producing a series of known exposures, in which each step is a certain multiple of the preceding one. This can be done either by keeping the time of exposure constant and varying the intensity of illumination, or by maintaining the intensity at a suitable value and varying the time. The latter method is the more convenient, the time ratio between successive steps being generally the square root of two, which is the same thing as to say that it has a logarithmic scale in which the separations are ·15. The measurement of contrast ob-

tained from the use of such an instrument is then known as the time-scale gamma. The intensity in a time-scale sensitometer is regulated with respect to the speed of the emulsion being tested, so as to cover the range of density required, and the maximum exposure time in the scale is of the order of one second.

We have already seen that the exposure time in sound recording is very much smaller than this—about $\frac{1}{36000}$ of a second as a rule. The effect of this wide difference will now be examined.

It is usually assumed for practical photographic purposes that exposure may be defined as the product of intensity and time, and that, provided the product remains the same, they can be varied reciprocally and still produce the same effect. This is known as the "Reciprocity Law" and is not strictly true. For a given emulsion and development conditions, there is an optimum value of intensity, at which a given density is produced with a minimum of exposure ; that is a minimum value of (Intensity × Time). On either side of this value the exposure must be increased to produce the same density. This gives the practical effect of a light valve gamma, which is lower than the sensitometer gamma, in the ratio of approximately 1·05 to 1.

We come now to the printing process, which is by contact, in a continuous rotary printer. Under these conditions the exposure of the positive is dependent upon the diffuse transmission of the negative in contact with it. The effective positive gamma is, therefore, the relation between positive diffuse density and negative diffuse density. In considering the relation between effective and measured positive gamma, two factors have to be taken into account. The first is colour coefficient of the negative, and the second is again reciprocity law failure. The relation between time scale and real positive gamma is usually of the order of 1·1, so a positive development of by $\gamma 2{\cdot}0$ will have an effective value of 1·8 about.

There is another contrast factor in the chain to be considered, and this is concerned with projection. In a projector optical system the film is illuminated by a lens focussing a slit on the film. The emergent light is collected by a window in the photo-cell mount, which restricts the direction of the effective rays to a comparatively narrow solid angle from the slit image. Some light is diffused by the silver grains in the image and thrown outside the effective area ; transmission is thus reduced and effective density increased. The denser the image the greater the scattering, because there are more grains to give this effect, and so the greater the density increase so caused. The result is an effective increase in contrast, or gamma, which amounts to a factor of about 1·4.

We can, therefore, multiply the effective gamma of 1·8, obtained by diffuse reading, by 1·4, giving 2·5.

The desired result is that the amount of light collected by the photocell in the reproducer shall be proportional to the negative exposure. A mathematical analysis shows that this result is achieved when the product of effective negative and positive gammas and projection factor equals unity. Taking the approximate relations between effective and measured values already given, we then have

$$\frac{\gamma n}{1{\cdot}05} \times \frac{\gamma p}{1{\cdot}1} \times 1{\cdot}4 = 1$$

$$\therefore \quad \gamma n \times \gamma p = {\cdot}83$$

where the gamma values are those given by measurement on the time scale.

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It has been assumed up to now, to simplify the argument, that the H. & D. curves used are always straight. The negative curve has usually a sufficiently long straight portion for the modulation to be confined to it, at least up to 90% modulation, but this does not apply to the positive curve. Referring once more to the two specimen positives in Fig. 3, it is seen that in one case the straight part does not continue below about density ·8, but in the other it continues down to ·5. When the effect is very pronounced, as it would be with the curve which starts to fall off at ·8, it is usual to increase contrast somewhat, measuring positive slope at the operating point, instead of on the straight part, or taking some compromise between the two values. Negative gamma is then adjusted to give the required product.

The distortion effects are shown clearly in Fig. 4. The curves show the relation between projected transmission of positive and exposure of negative, the latter being set out in terms of light valve opening.

The curves marked γ_0 ·8 and 1·2 are theoretical curves for real overall gammas of these values, assuming straight line H. & D. curves. The ideal distortionless case of $\gamma_0 = 1{\cdot}0$ is a diagonal straight line across the figure approximately midway between the two. The dotted curve is the result of practical test of conditions involving a compensated toe characteristic as just described. It is an extreme case, the negative gamma being ·55 and positive 2·4, positive transmission being 42% diffuse, instead of the usual 27%. Actually a darker print under the same conditions gave a better characteristic, but would not be quite so suitable as an example.

The lower curve shows a characteristic for an overall gamma of ·8, but a darker print than the other ·8 curve. At the bottom, on the right, is a sine wave which it is assumed is being recorded. For comparison this is reflected in the top left undistorted, together with the waveform resulting from the 1·2 characteristic and from the 42% print. The distortion is thus apparent. Underneath is the attenuated output wave resulting from the dark print example.

It is easy to calculate the slope at any point of a theoretical characteristic, such as the two shown in the top right-hand compartment of Fig. 4. The output levels in decibels resulting from the recording of a small amplitude signal, at any given point on the curve, can then be plotted against the operating exposure point. The result of a calculation based on the same two examples, ·8 and 1·2, is shown in the bottom left-hand compartment. The dotted line indicates the kind of thing which happens if the recording runs into the toe of the positive curve.

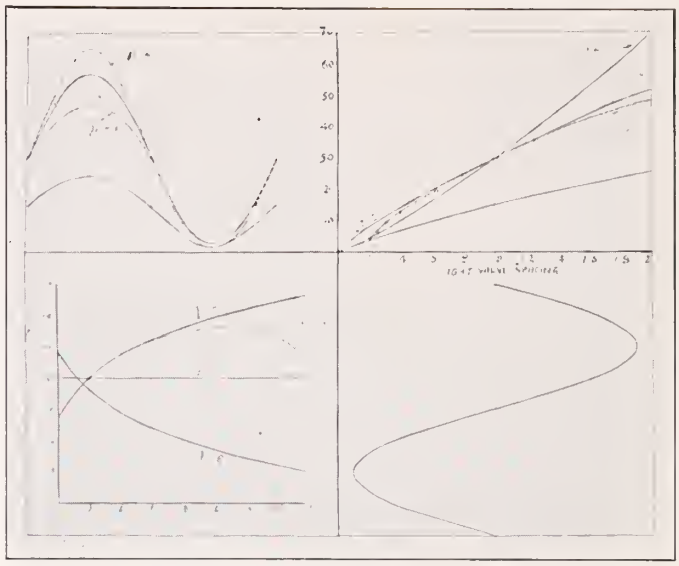

Fig. 4.

A practical test can easily be made on this basis by adjusting the exposure to a series of known values and recording on each a small amplitude signal. An oscillator output of low frequency is most suitable. The print can be reproduced and the output levels measured, a curve of the results showing at a glance what the processing conditions were, and giving a measure of the distortion. If the left-hand half of such a curve agrees with a certain theoretical curve, and the right-hand portion falls away from it, then toe distortion is indicated which cannot be cured by any adjustment of gamma.

A.C.T. Winter Programme

THE following are details of the concluding fixtures of the A.C.T. Winter Programme :—

Monday, February 3rd—Film Show : "Cavalcade of the Movies."

Monday, February 17th—Lecture : "The Advantages of Technical Co-operation between Studio and Projectionist," by Mr. G. E. Lansdown, of The Guild of Projectionists.

Monday, March 2nd—Film Show.

Monday, March 16th—Lecture : "Selling a Film and Publicity," by Mr. Robb Lawson, late Publicity Director, United Artists' Corporation, Ltd.

Monday, April 6th—Film Show.

The lectures will be held at the Pathé Theatre, 84 Wardour Street, by kind permission of Pathé Pictures, Ltd., and the film shows are at the Crown Theatre, 86 Wardour Street, by kind permission of Mr. Victor M. Gover.

The functions held so far have been highly successful and well attended, "standing-room" only being the usual greeting to latecomers. Some of the lectures are reprinted in this issue and others will be in our next number. The films shewn have been "Miracle of Life," "Jazz Comedy" and a "Colour Evening," being films of five different colour systems. The latter was attended by a leading technician of each system, who briefly addressed the members. Articles by Major Adrian B. Klein, M.B.E., and Mr. Arthur Maude, two of those present, will be found elsewhere.

Sold Out—Progress Maintained

THE last number of the *Journal* was sold out within a couple of weeks of publication and many persons have been disappointed through being unable to obtain a copy. May we remind readers that a regular subscription will avoid such disappointments in future. For 3/6 per annum, or 2/6 for A.C.T. members, the *Journal* will be delivered for one year immediately upon publication.

The present number shows a further increase in size. It is hoped to continue this progress and readers can help towards this end by supporting our advertisers; without whose co-operation such increase would have been impossible.

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Mr. SIMON ROWSON'S Survey at Royal Statistical Society

STATISTICS are a vital factor in the planning and organisation of modern industry. While to the layman they often appear dull, uninteresting and altogether outside his comprehension, to the engineer and the technician they are essential. Insurance Companies, engineering and electricity departments, Government offices, in fact all the complex assortment of industrial and civic bodies would be lost without them.

Hitherto the film industry has been almost alone in its complete lack of comprehensive statistical information. This remarkable omission has at last been remedied in what can only be described as a monumental work prepared by Mr. Simon Rowson, M.Sc., and read before the Royal Statistical Society on December 17th last. Mr. Rowson's paper is, in his own words, "a pioneer effort in scientific investigation in the social and economic problems of the people's amusements and recreations."

Mr. Rowson commences his survey with some figures (based on entertainment duty returns) relating to attendances at British Cinemas. In all the cinemas of Great Britain the total admissions in 1934 were about 957 millions, or at the rate of 18,300,000 per week. The total gross box-office receipts were about £40,950,000, and the average price paid per seat was 10·3d. A sum of no less than £6,800,000 was paid to the Treasury in the form of Entertainment Duty during the year.

The tremendous hold which the cinema has acquired over the population is shown by the fact that the total number of paid admissions represents an average of nearly 22 visits every year for each man, woman and child in the country. That "going to the pictures" is in truth the primary recreation of the masses is proved by the fact that 42% of the entire admissions are in respect of seats priced at 6d or under and that another 36½% paid not more than a shilling. Well might Mr. Rowson comment—"When we consider the duration of the programme presented, and there is added the splendour of the modern structures, the comfort and brightness of the interiors, it is no extravagant language to say that this modern institution is one of the sociological wonders of the century."

A table of the number of cinemas and seats in Great Britain reveals further interesting information. At the end of 1930 there were about 4,305 cinemas containing 3,872,000 seats, or an average of 900 seats each. Taking the total population as 45½ millions this gives a cinema for every 10,600 persons and one cinema seat to every 12 persons.

We who live in London, surrounded by gigantic Plazas, Astorias, and Empires, are sometimes apt to think that cinemas everywhere are of similar size and opulence. It comes, therefore, as something of a shock to realise that no less than 70% of all cinemas have a seating capacity of less than one thousand. Of this total of 4,305 cinemas, 3,085

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are thousand seaters or under, and only 1,220 have more than 1,000 seats.

Although the small cinema is the rule and the large the exception, the tendency in new buildings is for the large to predominate. Of 302 new cinemas built since 1st January, 1932, over 31% have more than 1500 seats each.

Mr. Rowson has a sympathetic word for the proprietors of many of the smaller halls who do not share in the prosperity of their larger and more up-to-date competitors. "The cinema's industrial revolution which followed ou the introduction of talkies," he points out, "bore with exceptional severity on a large proportion of the smaller houses, and the cost of adaptation to the new acoustic standards left them often crippled or without resources to enable them to finance the progressive improvement in the standard of cinema construction which has been a marked feature of the last five years."

In this connection the position of the small exhibitor is not made any happier by the competition of the big circuits which have grown so rapidly. The Gaumont-British Circuit —the largest in the country—started in 1927 with only 20 cinemas. To-day it has 331, with 10·6% of all the seats in the country. Similarly the A.B.C. group, which started in 1928 with 32 theatres, now has 225. Mr. Rowson observes that the growth of the circuits restricts the supply of good films available to the small exhibitor, the large booking companies exerting their greater booking power to reserve the best pictures for themselves.

We cannot help remarking that in this the film industry shows characteristics no different from all other capitalistic industries. The small fish starts out in life with the greatest confidence, only to be gobbled up eventually by the powerful octupus !

Proceeding to an analysis of British and Foreign films shown in this country, Mr. Rowson gives the following table :—

Period (year ending Mar. 31	Long.			Short.			All Films.		
	British	Foreign	Total	British	Foreign	Total	British	Foreign	Total
1929	129	550	679	166	663	829	295	1213	1508
1930	96	506	602	180	885	1065	276	1391	1667
1931	125	556	681	82	976	1058	207	1532	1739
1932	154	464	618	60	917	977	214	1381	1595
1933	162	481	643	73	741	814	235	1222	1457
1934	195	484	679	60	647	707	255	1131	1386
1935	190	477	667	123	697	820	313	1174	1487

Number of Films Registered.

It will at once be noted that British films are supplying a steadily increasing percentage of the total supply. Comparing the first three years with the last three years, the average number of British subjects rose from 117 to 182, an average increase of 65 subjects or 56%. In the same period there was a decline of foreign subjects from 547 to 487, an average drop of 50 subjects or about 9½%.

Another point of interest is the decline of the "short." Mr. Rowson regards this as regrettable, "because it implies diminishing attention . . . to those kinds of subjects which introduce the principal element of variety in the average programme." With this view many of us will agree. Unfortunately producers (and exhibitors) are too inclined to regard "shorts" merely as lumber to chuck into a programme in order to fill out odd minutes, and most of them look as if they were made for no other reason. Yet undoubtedly there is public demand for good "shorts," as the success of cinemas specialising in their exhibition testifies.

But if British companies have been lax in the production of "shorts," they have made up for it with "long" films (3,000 ft. and over). Since the Cinematograph Films Act (quota) came into force the length of British "long" films registered has increased steadily from 624,000 feet in 1930 to 1,186,000 feet five years later. The quantity of British film registered has always been largely in excess of the minimum quantity required to meet quota liability. In the year when the quota liability on the distributor was 10% the quantity registered was 70% in excess of that, and when the quota liability had risen to 17½% the excess was 64%.

This excess of production over actual liability is entirely accounted for by British companies. American renting firms succeeded in registering exactly the quantity of British film required by the Act and no more. Whatever we may think about the *quality* of some of the stuff produced for quota purposes in our studios, there has been a consistent rise in quantity since the Act came into force.

I am tempted to quote many more statistics, but sufficient have been given to indicate the very wide scope of the enquiry. Even so, Mr. Rowson is the first to admit that it is only a beginning. "I hope," he says, "that some other investigator will take the torch from my hand and will succeed in illuminating other corners of the enormous field of leisure and give us a comprehensive picture of the part which it occupies in the economic, social and spiritual lives of the people."

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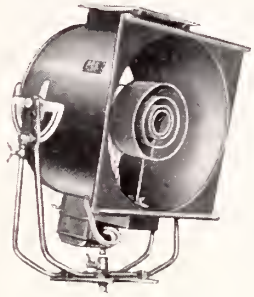

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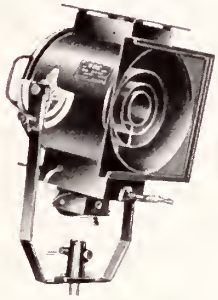

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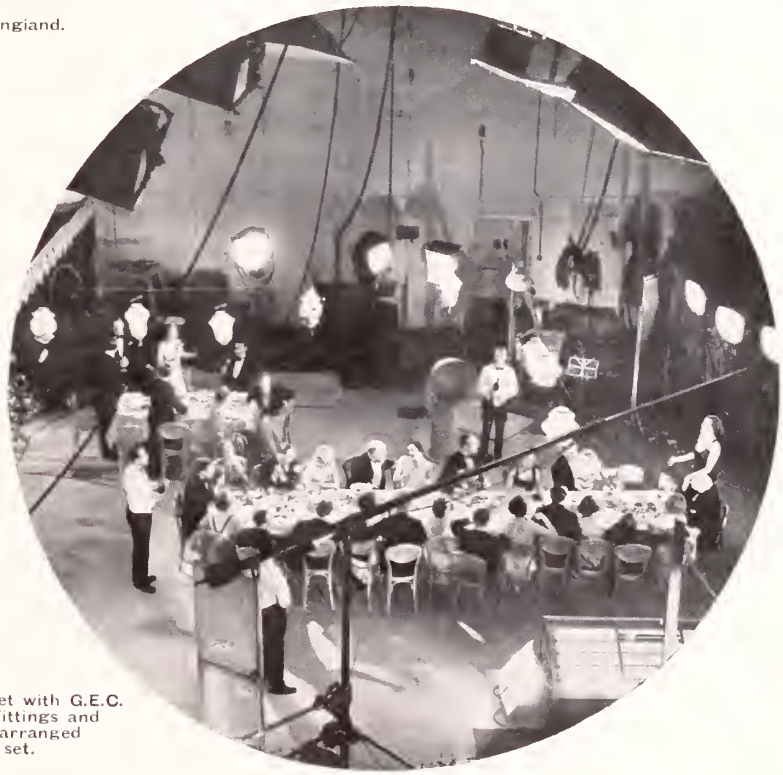

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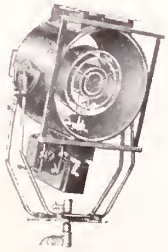

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That Colour Hoodoo

By A. E. C. HOPKINS

So much has been written, and rumoured, as to the army of "experts" who are likely to invade the studios if, and when, colour really arrives, that I feel tempted to put a few facts forward to our own lighting men.

We all remember the fuss and "Hoodoo" when sound was first wedded to sight, how numerous incompetent people were allowed to wisely shake their heads, pull down sets and rebuild them, and say "no" on principle to any constructive suggestion. Well, it is quite on the cards that the same sort of thing can happen again, and although I cannot talk theory to you, perhaps a few facts gleaned through hard and consistent colour production will not be amiss.

The word "consistent" is to my mind the golden key to colour pictures, and although in my experience the "Colour Expert" may shine in the numerous short test lengths that one sees from time to time, he makes a very rapid exit when it comes to lighting a complete picture consistently.

I honestly believe that certain systems have been turned down because the "Colour Expert"—as a rule knowing nothing of lighting—has placed every lamp in the Studio shoulder tight with the camera on the subject to be photographed, resulting in trite colours and flatness of image.

My first set was the most beautiful colour creation, picked out with coloured lighting, a picture to look at, but a "wash-out" on the screen. Reason ? The elementary fact that certain colours absorb others was overlooked ! Then we started with simple sets, and the fact has emerged that with a neutral or a white set, the lighting man should come into his own. Lit high, low or medium key, with sometimes a lightly tinted "jelly," a neutral set will express any degree of warmth at the photographer's will, and at the same time give that air of reality, so often lacking. This is proved by showing an ordinary black-and-white drawing-room set, on the screen, with just a few flowers in a vase or two. Then on walks a girl in a coloured frock—there is no violent reaction, the audience realise very gently that they are looking at colour.

The point that I am trying to make is, that putting colouring on one side, any good lighting man can satisfactorily photograph a colour picture on any system, providing he allows the extra percentage of light to suit that system. Plus, of course, the knowledge of the limitations of a given process, plus the artistic ability to know what colours blend, those that absorb others, and, of course, those that "fight." And last, but not least, let's hope he will have the assistance of a not too colour-conscious art director !

Here are a few points for what they are worth :—

- Don't get the colour bug, *i.e.* "Over" lighting.
- Keep a lighting plan of every set up *in all* circumstances.
- Keep special lamps with *new* bulbs for close-ups only.
- Mostly light round the face.
- Your best and only friend is "Make-up" ; he must be good and *consistent*.
- Don't shirk long dolly shots, they help *consistency*.

Arthur Maude

On Colour

In an Interview with George H. Elvin

An outstanding feature of A.C.T.'s recent Colour Evening, in which five leading technicians demonstrated and talked about five of the leading colour processes, was Mr. Arthur Maude's talk on his extensive experiences and his advice and opinions on the technicalities of colour.

Mr. Maude was a colour expert on Technicolor and received the Reisenfeld Gold Medal, by an overwhelming vote of American exhibitors, for his colour picture, "The Vision." In this picture, it has been said that the ideal and most artistic effects were secured by making colour a pleasing adjunct rather than the predominant feature of the film.

In an interview for this *Journal*, Mr. Maude talked particularly of the Debrie Colour Process, in relation to the all-important factors of cost and lighting.

Debrie Colour Process.

The Debrie Colour Process, financed by Mr. Debrie, is called Dascolour. Patents were first taken out in 1931 and have been worked on ever since. It has taken four years' continuous work to perfect the print. Mr. Arthur Maude is so enamoured with the process that, together with his partner, Mr. Arthur Cross, he has taken out an option for the British Empire and has the first refusal for the United States of America.

The quality of the process and its low cost are its main attractions. Speed of printing should make the process additionally welcome to news-reel companies.

No special camera is needed for the process, as it is possible to adapt an existing model at a cost of about £70. The only additions necessary are a double spool-box and a double negative. Debries have, however, made a special camera which will be available shortly.

As a rule, bipack processes take double the time and to overcome this a double printer has been invented which takes the same processing time as ordinary black and white. The cost is only an additional 5 per cent. The prints cost only one-fifth of a penny more than black and white.

In emphasising that the element of cost is vital, Mr. Maude pointed out that a three-colour system costs one-third more. While admitting that there are moments when a three-colour system may be necessary—for example, the photography of Royal Robes—as a general rule two colours only are sufficient. A forest can be photographed in two colours when it is remembered that the component colours of green are yellow and blue. Ninety per cent. of stage work needs but two colours. Why should film work need more ?

Lighting.

The essence of colour photography is lighting and entirely different treatment is required from that for black and white. Colour must be clearly defined. An excessive front light is not required and no extra power than for ordinary black and white photography is necessary.

(*Continued on next page*).

The Gasparcolor Process

By Major ADRIAN B. KLEIN, M.B.E.
(Technical Adviser to Gasparcolor Ltd.)

PROJECTIONISTS may be excused if experience has led them to express a cynical indifference to the extravagant claims made on behalf of this or that colour process—a process which is always going to revolutionise the industry. They may also be forgiven if they are rather vague should they be asked to define the precise distinction between two-colour and three-colour films, between "additive" and "subtractive," or between these two and the latest "additive-subtractive"; for a thorough grasp of the laws of physical optics and of the phenomena of colour vision is necessary for a proper understanding of the theoretical basis of colour processes. Nevertheless, it is desirable that the wide-awake projectionist should know enough to ensure as far as practicable the optimum conditions for presentation of any colour process, no matter to what species it may belong.

Arthur Maude (*continued from preceding page*).

Fringing of colours must, however, be safeguarded against. A human being has two eyes with which to select his vision. A camera has only one lens, and is therefore more restricted than the eye. In brilliant sunshine, for example, red must be fringing and, in the case of a sunset at sea, the sea would *appear* red to the camera, although we *know* it is not so. We must have a light or lights behind the object of colour in order to kill this fringing. For this reason it is vital that the colour expert—the cameraman—should be with the scenic designer when the sets are being designed. Natural sources only—doors, windows, etc.—should be used to obviate fringing.

Back lighting can make a stereoscopic effect in colour with twice the ease of black and white, but it is essential that the scenery must not be painted or wall-papered in certain colours or lack of colours. Darkish grey panelling, or any dark shade, will help obtain a stereoscopic effect. The proper effect is obtained by turning the front lights as much as possible off the scenery. Lighting should be reflected light and not direct light. Any object which it is desired to emphasise should be lit separately by spots.

In the new art of colour pictures long shots are of necessity not quite so bright as foreground shots, because the light is so much further away. Therefore, it is essential that in mid and foreground the light on the colours must be entirely different from that on the face. There must be two sources of light for midshots and the colours will then correspond in density to the colours in long shot.

Finally, it must be emphasised that it is essential to forget that we are shooting colour once the colour scheme has been devised. Every costume worn, whether for modern or costume play, must be calculated according to the foreground and close-up shots required.

As far as possible there should be only one salient point of colour in each foreground shot. Costumes or clothing of other persons should be chosen to blend with that one salient point.

The experiments of the last twenty years have at length resulted in more than one process which can claim full-scale colour reproduction and which fulfils the practical conditions of price, processing and projection. One of these processes is already familiar to all of us, namely, the recently perfected three-colour "Technicolor" film. Very beautiful work has already been shown and a lot more is on the way.

The most recent colour process to make its debut is known as "GASPARCOLOR." A great deal is likely to be heard of Gasparcolor film in the immediate future. It is therefore important to know what it is like and how it is made.

To begin at the end—Gasparcolor film is a colour film giving accurate reproduction of all colours, and ready to go into any projector, anywhere, without any addition to the projector; and without any departure from standard black and white practice.

It is hardly necessary to state that in all colour photography one has to analyse the light coming from the object to be photographed. In other words, we have to obtain negatives which record limited wavelength bands in the whole range of visible light known as the spectrum.

For this purpose we can divide the spectrum into two regions, or into three. Two records can only give us a comparatively limited reproduction of the original colours. But owing to the nature of colour vision it is possible to reproduce every colour from the mixture of varying proportions of three colours. These three are the so-called primary colours—Red, Green, Violet. It is essential, therefore, in order to reproduce all colours as seen by the eye, that three photographic records should be obtained; the first being taken through an appropriate red filter, the second through a green filter, and the third through a blue filter (or violet, as it is generally called). In a three-colour cinematographic process it is necessary to take all three pictures simultaneously. This can be accomplished in several different ways. We can employ a special camera, in which a prism system is used behind the lens to divide the beam so that more than one identical image can be obtained on more than one gate. It is usual on such cameras to have two gates, one at right angles to the other. In one gate we expose a single film and in the other we expose two films, one behind the other (known as bi-pack). It is possible with such an arrangement to get a record of the blue light on the single film, of the green light from the front film of the bi-pack, and of the red light on the rear film of the bi-pack. When developed in the usual way, we have thus obtained three geometrically identical films, but each will represent a record of the subject in terms of one of the primary colours. Such a system is used by Technicolor and also by Gasparcolor for the photography of the negatives. Naturally, if the subject is still, as in the case of cartoon photography or trick work, it is possible to photograph the pictures all on to one film. In this case it is only necessary to alter the colour filters successively and to take three frames of each shot. One through red,

one through green, and one through blue. But no matter how the three negatives are obtained—what is important is how they are going to be printed on the final positive film. Here it is that the processes differ from each other fundamentally.

Gasparcolor film is the first colour film positive material upon which the three negatives may be *directly* printed each in its own appropriate colour. For the first time, no dyes are used in the processing, no staining, colouring or toning enters into the treatment of the film. This sounds like a miracle, and in one sense it certainly is a miracle. Yet the principle is simple. Imagine three coloured emulsions. That is, emulsions which contain transparent dyes in suspension in the gelatine. These emulsions are coated on the celluloid in layers in the following order. On one side of the film we have pink, and beneath the pink layer a yellow layer. On the other side of the film is coated a blue layer. Now, these emulsions are so sensitised that we can print them with coloured lights each in turn, independently of the other.

The layers are sensitised in the following order: The pink layer is sensitive to blue light only, but the yellow layer underneath is sensitive to *red light* also. The blue layer is blue sensitive only. By printing the three layers with coloured lights it is possible to print the film three times upon the three layers independently of each other. The film which is to print the pink layer is printed with blue light, but as the yellow layer lying beneath will not admit blue rays, nothing from this negative is recorded on any layer except the uppermost pink layer. Next, the yellow layer is printed with red light, but as the uppermost pink layer is not sensitive to red light nothing is printed upon this layer, whereas the yellow layer lying underneath the pink layer is sensitive to red light. It therefore records the red light. Finally, the blue layer (which is blue sensitive) on the other side of the film is printed with the third film, using white *or blue light.* Obviously only blue light can get through the blue coating and no blue light can enter the yellow emulsion lying beneath. Thus the three layers can be separately printed without the slightest danger of printing more than one layer at a time.

The three printings can be done on a single printing machine as fast as normal black-and-white.

The subsequent development of the film differs in minor respects from black-and-white, but normal processing machinery is employed.

The claims of the Gasparcolor process are :—

(1) It is three colour film and therefore gives perfect reproduction of the whole range of colour.

(2) It is photographically produced print and does not rely upon dyes, colour-toning, or chemical treatment for the colour.

(3) It is accurately reproducible by standard norma photographic practice and almost standard processing equipment, whereas other colour processes require specially equipped processing laboratories.

(4) It is as transparent as black-and-white film and requires no more than the normal illumination for projection. It is virtually a grainless pure colour image.

(5) No addition of any kind is required to the projector. It can be exhibited anywhere at any time in any projector.

(6) It does not show scratches more than black-and-white film.

(7) Sound track is black on a transparent *red* background giving normal results.

Gasparcolor film is double-coated, and projectionists very generally have been of the opinion that it is difficult to focus double-coated colour films. This opinion is based on an accurate observation, but the cause of the difficulty does not lie in the fact of the film being double-coated. First of all, previous processes have not had sharp pictures to focus. That the double-coated film cannot be the cause is shown by the fact that the distance apart of the blue image and the red-yellow images is, at the most, four and a half thousandths of an inch. Now, assuming a projection distance of 100 ft. and a 4-in. lens focus, the distance apart of the sharp projected pictures could not be more than $1\frac{1}{2}$-in. Therefore, it is absurd to blame the double coating of the film.

The sound-track of Gasparcolor film, having a red background, it may be found advisable to increase the volume by one or two steps. Naturally it is impracticable to use non-red-sensitive photo-electric cells.

The question of the colour characteristics of the illuminant in relation to the projection of a colour film involves too many factors to be discussed in this brief description; but this aspect is really very important and it will have to be taken into consideration by both the producer and exhibitor of colour films. A large difference in the colour temperature of the light source can cause a tremendous difference in the appearance of the colours upon the screen.

—(Reprinted from *The Projectionists' Journal*).

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Reduced Railway Charges for Cinematograph Apparatus

As a result of correspondence with the London, Midland and Scottish Railway Company, we are pleased to report the following reduced railway charges for cinematograph apparatus, conveyed to the Association in a letter, dated 23rd December, 1935, from the Chief Commercial Manager:

"I would inform you that it has now been agreed between the Group Railway Companies that the free weight allowance and excess luggage charges for ordinary passengers shall also apply in the case of a Cinematograph Camera and Tripod accompanying a Cameraman travelling to take pictures for inclusion in newsreels.

These free weight allowances are 150 lbs. for each passenger travelling 1st class, 120 lbs. 2nd class, and 100 lbs. 3rd class."

We are pleased that the Association has been able to render this service to the Film Industry.

Some Aspects of News-reel Recording

By G. H. NEWBERRY, A.C.G.I., B.Sc. (Hons.), D.I.C.

THE recent formation of a News-reel Section of the A.C.T. has cast a spotlight on this steadily plodding but all-important branch of the Film Industry. This is, therefore, an opportune moment to write a few words on news-reel technique. I shall say nothing of the technical make-up of the modern news-reel, nor recount the history of its growth, but I shall confine myself to the sound-recording side of the business, and to the equipment, and the demands made on the equipment of news-reel recording units.

In the space of a short article, it is only possible to touch lightly on the various aspects of news-reel recording technique, as differing from studio technique. There is ample material for a book devoted entirely to the subject.

The Technician.

First of all, the news-reel recording engineer is a technician from whom a lot is demanded. For instance, a single recording channel in a studio is staffed by a microphone man, a maintenance engineer, a recording cameraman, and a mixer, whilst the news-reel man is all four at the same time. He must gauge his best microphone positions before a story starts, without rehearsals or retakes, and, if his gear decides to go all gaga a split second before the first shot, he must put it right in half that split second. And after all that, he must be capable of keeping the edge of the counter polished with his elbow, whilst his foot rests on the brass rail. Sometimes he is worse off than a doctor; the telephone rings at some unearthly hour of the morning, calls him from his bed to an outbreak of fire, which of course was well out before the night-watchman dialled his number. I think he is definitely worse off than the doctor, because the doctor may have the satisfaction of viewing a real dead body at the end of his journey. He must fit himself to his environment; one morning, for instance, he is probably whispering mild threats about decibels over the ermine collar of a Lord Mayor, and the same afternoon, he might be in some dark and dingy East End slum, telling some dirty little urchin to get his ——— face away out of it!

There are, however, lighter sides to his many-sided capabilities. I well remember one Armistice Day, just as dawn was breaking, an engineer scaling one of the very tall but only temporary lamp-posts set up in Whitehall, and scaling it with remarkable agility, considering that he had a condenser mike slung over his shoulder. On arriving at the top, he fixed his mike so that the diaphragm was pointing to the position occupied by the massed bands, and was secretly congratulating himself on having bagged an exclusive position, when a small party at the bottom of the lamp standard was congratulating itself on having bagged something else. This small party consisted of a Constable, an Inspector, and an Office of Works Official! The debate which ensued was not exactly parliamentary and the result was, as stated in official language on the spot—"You can't have that there here!" However, the mike remained there—without its cable—throughout the ceremony, in all its solitary splendour.

One winter afternoon, in the process of rigging up my gear in a famous night club, ready for shooting about midnight, I was running my cables from the truck in the street through a window into the Club premises, when a voice from the pavement said, "Lor lumme, Bill, look, they got the vacuum cleaners in at last. 'Bout time, too, with them dirty, stinking night clubs!" Of course, on some occasions, we have been accused of being the B.B.C.!!

Recording Systems.

Well, let me leave this drivel and go technical. There are three types of equipment in modern units:—

(*a*) Variable density — light valve method.
(*b*) ,, ,, — glow tube.
(*c*) Variable area — galvanometer or vibrating mirror method.

The news-reel camera is generally a combination of picture camera and sound recorder, though the separate film recorder was used more extensively in the past and is still in use. The combination camera allows of an extremely light-weight gear, but one very important drawback is the difficulty of obtaining an exposure on the sound track, which is reasonably independent of picture exposure under all conditions, and this applies more to variable density than variable area. Later, I shall try to indicate by mathematical analysis, some measure of the distortion which can be obtained by very bad picture exposure conditions. Another drawback, which is serious in very cold weather conditions, is the liability to wow. Heavy fly-wheels are out of the question; the intermittent motion of the film through the picture gate, and mechanical movement of the gate, must be completely filtered out at the recording drum or sprocket. With separate film recording units, however, both exposure difficulties and wows are easier to control, and with the exception of modifications for reduction of weight, such units are similar in performance to studio equipment.

Sound Pick Up.

Let us examine briefly the separate parts of a news-reel equipment.

Firstly, the microphone. I have heard an accusation that the quality of sound recorded by news-reels is inferior to studio quality. This is absurd, of course. The cinema patron, who is becoming more and more a critic of good quality sound, would not put up with inferior sound quality in the news items. But where it does fall a little short of studio quality is in the presence of extraneous background noises. The mike must be used in all sorts of conditions, and the three main sources of interference are in order of importance:—

(*a*) Background noises (traffic, general murmuring, etc).
(*b*) Wind on the mike.
(*c*) Camera noise.

(*a*) Background noises are unavoidable. They depend on the location of the story, but they can be reduced to a minimum by careful mike placing, which is only possible after considerable experience with various types of stories. A small parabolic reflector could be used, but its size would be limited and therefore the bass response would fall off very badly.

(*b*) Wind is the news-reel engineer's worst enemy. He overcomes it to a great extent by using a wind shield around the diaphragm. This shield is generally of some streamlined shape and is covered with silk or old cinema screen material. It filters out wind noises, and generally stops that "paralysing" effect of a strong gust, but it also reduces the response at the higher frequencies. Measurements made on such a shield have shown a drop of 6 db. at 5000. This drop can, of course, be rectified in the main amplifier by using a bass filter. This filter is useful for other occasions, when, say, the drums in a military band or the rumbles of traffic are too heavy.

(*c*) Camera noise is only apparent when close-up speeches are being taken. Provided the camera is in first-class mechanical condition, with no noisy gears, the limit for the distance between subject and camera is about 15 ft.

Amplifiers.

Amplifiers must be light-weight and designed to have a low H.T. and L.T. consumption. As they are battery driven, this low consumption is obvious, but, as anyone with experience of amplifer design will agree with me, it is not easy to design equipment having the necessary frequency curve and overload limits, and still maintain a low load on the batteries. Provision is generally made for mixing two mikes only, as experience has shown that the use of three or more is very rarely called for. The high-pass filter, referred to above, is included and the overall gain is in the neighbourhood of 80 db. The recording output level for the glow tube unit is about 12 db. higher than that for a galvanometer or string unit. Structurally, the amplifier must be robust, in order to withstand continuous vibration and rough handling, and all components must be readily accessible for quick repairs.

The output circuits of the various systems demand certain limitations. The light valve, and the vibrating galvo, are both very low impedance units, and as they carry no D.C. component, they can be used at an appreciable distance from the main amplifier. Transformers are used to bring all impedances to a 500 ohm line. But the glow tube is a high impedance unit and carries a D.C. component, and there is therefore a limit to the length of output cable.

Distortion in Recording.

We now arrive at the recording device. The light valve is susceptible to temperature changes and dust between the strings. The oil-damped vibrating galvo is also affected by temperature. The glow tube is independent of such changes, but, together with the light valve, suffers from possible photographic distortion, due to the film being developed for picture and not for sound. By careful adjustment of track exposure to suit picture exposure, this distortion can be eliminated, but I would like to show very briefly the degree of distortion that is possible under bad conditions with variable density recording.

Fig. 1 represents a typical Hurter and Driffield curve. Assume that the track exposure is very low, the mean being at 2 (Relative exposure) on the line AB. Maximum exposure will be assumed to be at the point 8. When 100% modulation takes place, we get a wave form, which, for simplicity, we assume as a pure sine wave, superimposed on the line AB. Now the shape of the HD curve will give us a density wave as shown, superimposed on the line CD. This wave form is obviously not like the original wave about the line AB. With the use of Fourier's series, we can examine this density wave form mathematically. Assuming the original exposure wave form to be represented by the expression $y = 10 \sin x$, we find that the new density wave form is expressed by

$$y^1 = 1.25 + 8 \sin x - 0{\cdot}9 \cos 2x - 0{\cdot}25 \cos 4x + 0{\cdot}3 \sin 3x$$

$$\text{or} \quad y^1 = 1{\cdot}56 + 10 \sin x - 1{\cdot}1 \cos 2x$$

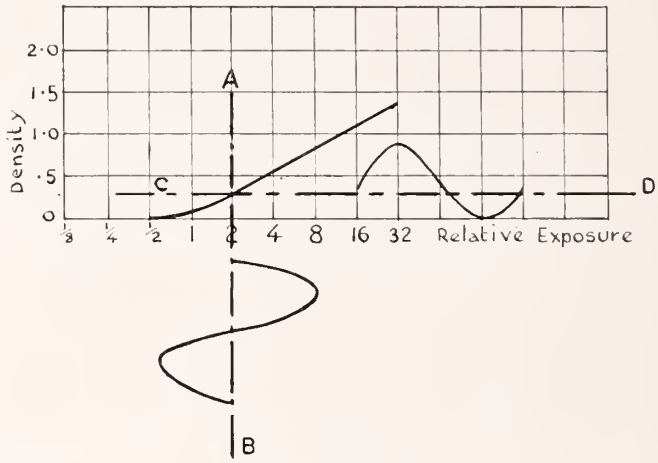

Fig. 1.

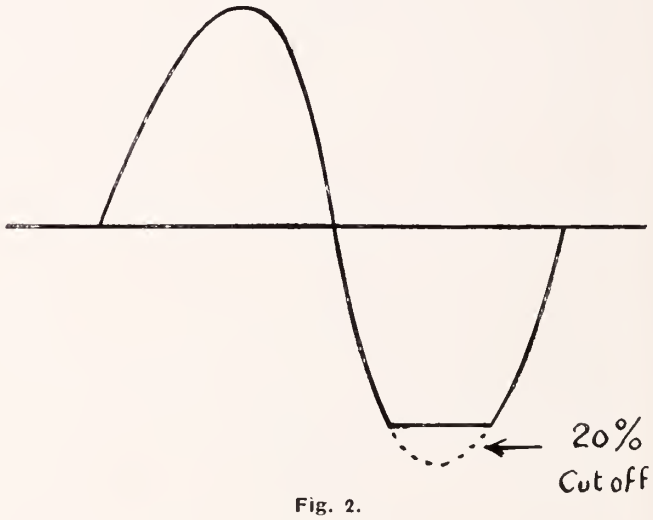

Fig. 2.

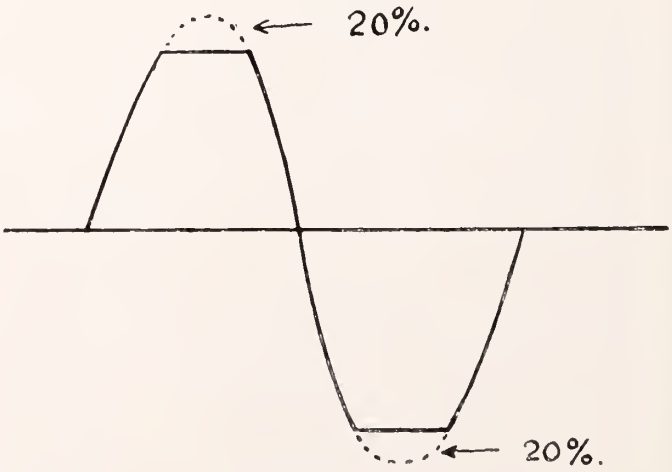

Fig. 3.

(*Continued on page* 88).

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News-reel Recording (*continued from page* 86).

In other words, the HD curve has introduced a 12% 2nd harmonic and 3% 4th harmonic, and several higher harmonics (all out of phase harmonics). We are therefore over the border line of allowable percentage distortion. This examination does not take into account the effect of incorrect negative and positive gammas, where loss of volume and further distortion might be introduced. Variable area recording, of course, merely works along the line AB, and is therefore not subject to such frequency distortion, provided the cutting edge remains sharp within the limits of the track exposure, and provided the gammas lie within the required range. Hence, variable area recording with the combination camera is far less susceptible to photographic distortion than the variable density track.

In studio work there is no excuse at all for overshooting. Rehearsals and retakes are sufficient to give a perfectly modulated track. But the news-reel engineer cannot possibly prevent an occasional "overmod."

Fig. 2 represents a 20% "overmod" with a glow tube system, and Fig. 3 the same percentage with the vibrating mirror system.

Provided the strings pass each other without obstruction on their inward travel, the light valve would distort a wave form in the same way as Fig. 3. By using Fourier's series again, we find that Fig. 3 gives 8% 3rd harmonic and 2·5% 5th, whilst Fig. 2 gives 4·5% 2nd harmonic and 2·8% 4th harmonic and 3% 3rd.

Overshooting is therefore more serious with the galvo system than the glow tube system. If we repeated Fig. 3 with a 10% cut-off only, we should find that the distortion was negligible, but of course 20% is beginning to make itself heard!

The above analysis is essentially very brief, but expanded fully, and taking all points into consideration, it provides some very interesting results. I have indicated sufficiently, I think, that news-reel recording, appearing at first sight simple and straightforward, is governed by certain limitations, which do not apply to studio technique, and that the engineer has to keep his wits about him, to work within those limits to produce a first-class sound track.

The Future.

And what of the future? At present there are only two publications per week, but the ever-growing popularity of the News-reel Theatre might produce a demand for the daily reel. Speed and more speed would then be the order of the day, but the difficulties could soon be overcome.

The new science of television would become indispensable. Besides theatres being linked by television channels to one central reproducing headquarters, we shall find that picture and sound will not be recorded on location, but at one main recording centre, the gear on location being only television cameras, mikes and sound amplifiers and transmitting apparatus.

The cost of attaining such a state of affairs will be governed by the demand, but the recent decisions of the B.B.C. to carry out television programmes with their own news stories, is bound to increase the speed of production of the news-reel and make the present competition keener than ever. The news-reel technician has had to maintain his quality under diverse conditions, but the future holds glowing possibilities for him to *lead* the film industry in the preliminary applications of television.

Foreign Technicians

The Policy of The Association of Cine-Technicians

In response to requests from members, we are pleased to publish A.C.T.'s views on the employment of foreign technicians in the British film industry. The following is a summary of statements issued to the press during the past few months.

The Association makes it clear that it is not opposed to foreign ace technicians working in British studios in reasonable numbers, provided that :—

(*a*) their employment does not deprive equally expert British technicians of employment;
(*b*) their crews are British;
(*c*) The Association is given an opportunity of being consulted when renewals of any such permits are applied for.

It is felt that the above conditions are not regularly observed and that the claims of certain individuals to be ace technicians are not always fully investigated, or, if they are, the fact that they are not definitely in the front rank does not necessarily lead to the refusal of permits.

Further, it is understood that in the issue of permits the entertainment industry is considered as a whole. We are told, for example, that the employment of British actors and actresses abroad is an important factor in determining the issue of permits to foreign technicians for work in British studios. The Association feels that this retards both the technical progress of a *British* film industry and the personal advancement of the younger technicians.

Until all countries withdraw their restrictions on the employment of foreign labour, it is felt that conditions in this country should be no less rigid than elsewhere. It is extremely difficult for British technicians to work in Hollywood, and even a musician of the calibre of Jack Hylton is only allowed to work in America on condition of his band being composed entirely of Americans. We have stressed the importance of British crews before, and in this respect commend the facts about Jack Hylton to the attention of the Ministry of Labour.

Further, we feel that permits should generally be granted only for a single definite picture, named on the permit, rather than for a time period.

The Association of Cine-Technicians is not unmindful of the important part played by technicians of other countries in the development of the British film industry, but it does feel that, particularly in view of the considerable number of competent British technicians at present without regular employment, the whole question of the issue of permits requires careful overhaul.

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Trailers

By LESLIE EVELEIGH, F.R.P.S.,

Production Manager, National Screen Service, Ltd.

THE general idea of the making of a Trailer is that a few scenes are taken out of the picture, joined together, a few titles stuck on to them, and that is a trailer. Nothing could be further from actual fact.

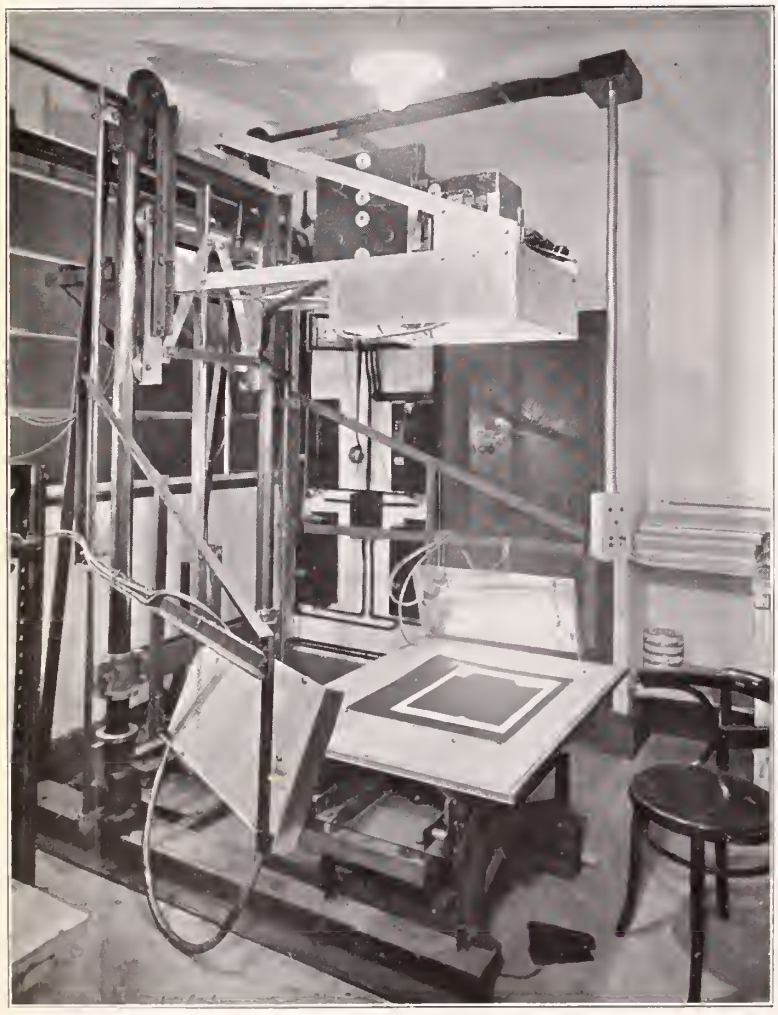
In proportion to its length in relation to the length of a feature, there is just as much thought, preparation, trouble and expense per foot goes to the making of a trailer as to the feature it represents. Let me give you an outline of the procedure.

First, when a film is near completion, before it has the final music dubbed on to it and the final polish applied, it is viewed, generally in conjunction with either the director or the editor of the film, and a careful note taken of scenes which will stand by themselves without a context and still mean something interesting, intriguing or humorous. It must be remembered that in constructing a feature film, incidents are very carefully led up to, to get the full dramatic effect required, and very often a scene which the average person would consider to be invaluable for a trailer may be useless because, divorced from its leading-up scenes, it becomes just meaningless. Having decided upon the scenes to be used, a complete scenario of the treatment the trailer is to receive is made, and this treatment is discussed, altered and approved with, and by, either the owners or the renters of the film. Work now commences on the trailer proper. The list of titles is sent to the Art Department and the ncessary cards made, either for superimposing over actual scenes from the film, or for use in conjunction with abstract backgrounds. Two different treatments in the Art Department are used for these alternatives, and if abstract backgrounds are to be used for the trailer, then those backgrounds relative to the wording to be used are also made at the time of the title cards. These are then sent through to the Camera Department, with the necessary instructions for the various types of trick work in which we specialise, and while this is being done, the scenes which have been chosen are being cut and edited to obtain the agreed tempo for this particular subject. This cutting and editing process is an extremely fascinating one, because the scenes are presented irrespective of their chronological order, but in such a way as to build up a definite interest in themselves. It is a maxim with us that a trailer must be an entertainment in itself. If the trailer is entertaining, then the film which it advertises has been impressed upon the minds of the viewers, and subconsciously suggests that it is necessary to see the film which the trailer represents. When the scenes are in the order in which they are to appear in the trailer, the titles are joined in, the necessary music or commentary fitted to them, and the complete trailer is then in rough formation. If we are satisfied that the correct rhythm for that particular subject has been achieved, then the negative is cut, a print taken off and submitted for the approval of either the owner or the renter of the feature.

The foregoing is just a rough outline of the procedure in making a trailer, but of course there are details it is impossible to go into in such a short article as this. Suffice

(*Continued on page* 91).

A Corner of the Art Department at National Screen Services. 17 Artists work in the Complete Department.



One of the Animators at National Screen Services.

Cinema Log

Finance.

1935 holds the record for investments in the Cinema Industry. Three million, six hundred and seventy-seven thousand, four hundred and forty pounds were subscribed. Twelve public companies were registered, with a capital of £664,500, and 326 private companies, with a capital of £3,012,940. The most interesting registration from a technician's point of view was Technicolor Ltd., with a capital of £160,000. 1935 beats the previous year in the investment race by £1,369,150. Well, Spring is on its way, and the "crop" of production flotations looks good. Let us hope they offer progressive employment to the cine-technician, and we trust that the "Carey Street" mushroom crop will be poor in the Autumn.

The Third Dimension.

We hear little about the progress of Stereoscopic Films. An occasional patent, however, proves that scientific brains are battling with this obtuse subject, and before we know where we are, these inventions will have become commercialised. Personally, the direct perception of relative distances will, I feel, give a new lease of life to Cinema. It will, of course, bring new problems for the production brains to overcome. Art Directors will require to revolutionise their present principle of set construction and the future will require bolder treatment. Camera and lighting technique will have to overcome strange problems, and the Trick Department will have to scrap present methods. For instance, back projection will be washed out by third dimensional practice.

News-reel v. Television.

With the approaching competition of television, the "News-reel War" is at an end, and an armistice has been declared. This is a happy event, providing it does not kill the individual initiative of the respective companies.

Movietone, Gaumont British News, Pathe Gazette, Paramount and Universal will be the first organisations to meet the attack in the Cinema v. Television battle. They will be fighting to retain the support of the great British public, and their competitors, with the support of the Government and the B.B.C., are busily forming their production units for the fray. Cheese-paring methods will not pay; News-reels must be improved by red-hot and interesting excerpts; actual sound used intelligently and commentaries pepped up and used only when essential. It is time for the two-reeler News-reel, so that good coverage can be given to each subject. News-reel technicians are straining at the leash, and it is for the editors and other executives to put them on the right road. Let them have their head and good results will quickly be obtained. The industry looks on, and I am sure will give those who are "Good Soldiers" arms and ammunition in the form of increased visions and revenue. Remember, that with mass production methods of manufacture and hire-purchase facilities, television may be in general use at any moment.

Colour.

This will be a colourful year for our British Industry. Kodachrome and Dufay colour have given the 16mm. amateur simple manipulated colour systems. In the professional field, Technicolor is building what should be the most modern colour laboratory in the world. Gasparcolor are turning out good work at Thames Ditton. Spectracolor and Dunning colour are in course of active production.

Amateur Production.

Talking of the amateur, I had the pleasure of visiting the Canterbury Cine Society recently, and was surprised at the knowledge and skill of these enthusiastic workers. Their best endeavour is the manufacture of the new type of projection lamp, for use in their studio. This gives remarkable efficiency and is made entirely of papier-maché. The reflectors are of silver paper obtained from cigarette packets. These lamps are constructed so scientifically that not only is every ounce of light projected, either in a diffused or concentrated form, but the heat is reflected away from the lamp housing. These people have quite modern studio equipment, with plenty of lighting under the chief of the local Grid system, and their lamps have been used by professional units working in the Canterbury area with remarkable success.

KENNETH GORDON.

Trailers *(continued from previous page).*

it to say that in London we turn out one complete trailer every day (five days a week) and handle, which means edit, for this market, a trailer on every American film. These trailers, of course, are sent over from our New York office and are identical with those used in America, but quite a number have to be Anglicised.

We have a staff of between 160 and 170, and we have approximately 4000 change-overs every week. We do not allow change-overs between theatres, but insist that every copy is sent back to us for re-examination before again being sent out to a theatre.

We are sometimes accused of bringing people into a theatre under false pretences. Our reply to this is that we show nothing in the trailer, except our titles, which has not actually come out of the picture; in other words, the trailer is a sample of the film, but if the film as a whole does not live up to the sample shown, that is not our liability. Also, we definitely have a conscience. If, for instance, in a quota picture which is a comedy, there are three gags which may raise a laugh, under no circumstances do we put all of them in the trailer; we may use two, but never the three.

Invitation to A.C.T. Members

MR. EVELEIGH, the writer of the above article, informs us that he would be only too pleased to make arrangements for any member to be shewn round the National Screen Services premises. The only request is that a telephone call be put through to Gerrard 4851/2/3 to make a definite appointment before accepting this offer.

Still] [Collingburn

Billy Williams, an A.C.T. member, has just returned from Tanganyika, where he was the first cinematographer to climb its highest mountain, Kilimanjaro, which is nearly 20,000 feet high. Mr. Williams was the hero of the expedition, being the only member to reach the summit.

Some remarkable photographs have been brought home and we are pleased to print opposite a few of them.

The expedition was carried out by Safari (Africa), Ltd.

Details of the photographs are :—

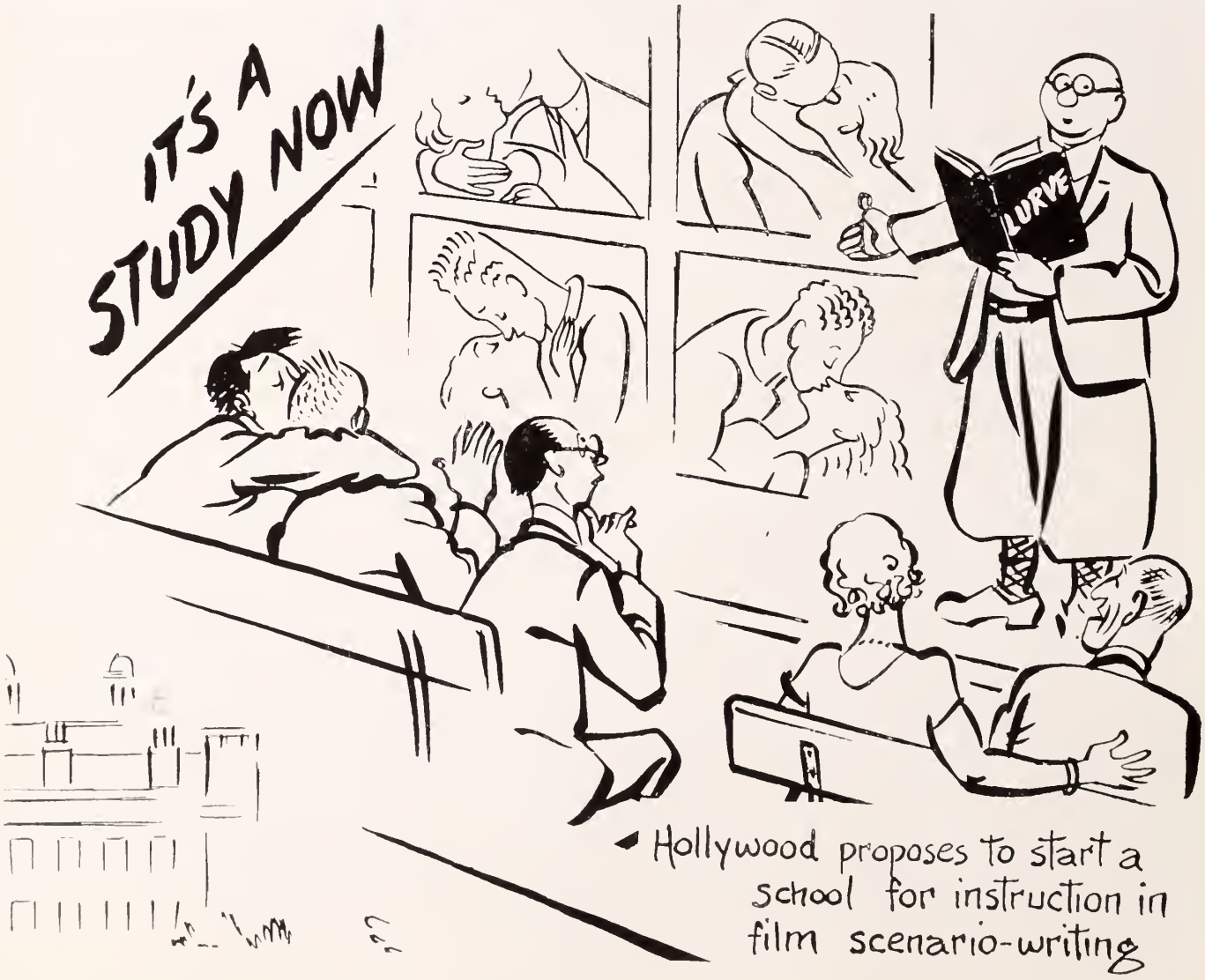
(1) and (2) Looking down into the crater, these illustrations form a panorama picture. On either side there are huge glaciers, the one on the right being some 200 feet high.

(3) and (5) Fine specimens of the Warusha Tribe who live in the native reserve around the foot of Meru Mountain, Tanganyika Territory. In their head-gear, etc., they are a copy of the famous Masai Warriors.

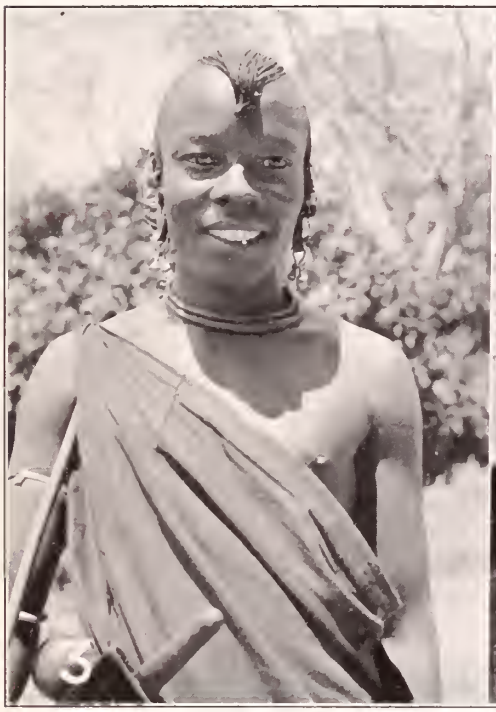
(4) Taken at 19,400 feet.

(6) Filming Mwenzi at 17,000 feet.

(7) Kilimanjaro and Mwenzi, taken at 15,000 feet.



By courtesy of Low and the "Evening Standard."



[See page 92.

Optical Printing—Its Uses

By BERT CRAIK, B.I.P. Optical Man

WIPES AND MIXES

MANY film editors look upon optical work in terms of "wipes" and "mixes." Here their knowledge and interest seems to end. Consequently, I propose to outline briefly some of the uses to which optical printing can be applied in motion picture production. Its main object, of course, is to give the final polish to continuity; those awkward gaps between time, place and/or thought, which in some cases have been overlooked during production, are successfully bridged by the kindly wipe or mix.

Fig. 1—By courtesy of B.I.P. from their film "It's a Bet."

The **Mix** or **Dissolve** and its uses are well known, but a word of warning; where possible don't use it as a transition between night and day shots of different scenes. The result, to say the least, is jarring. Regarding the length of the mix, most film editors throughout their production seem to favour a fixed length, which may be anything from 2-5 feet. They would get much more pleasing results if they allowed the length of the mix to be governed by the tempo of the story and the action where the transition is to take place.

Closely allied to the mix is the **Wipe,** which when properly used is a perfect method of changing from one scene to another. The difficulty is in making the wipe fit in with the shape and follow the action of one or both of the scenes. Unless it does this, we get a fancy pattern on the screen at change of scene which detracts the attention from the story and so defeats its own purpose. Therefore, if you cannot employ a wipe without making its use obvious, then discard this method and fall back on the friendly mix.

Examples of the correct application of the wipe follow:

(1) A vertical wipe, following an insert, which is removed from the screen as one would turn over the page of a book, leaving in its place the second scene. It would be necessary in this case to shoot the insert as already stated. (See Fig. 1).

(2) Two panoramic shots travelling across the screen from left to right; here a vertical wipe in the same direction is indicated. If both scenes are of a similar character and travelling at approximately the same speed, even an expert will have difficulty in telling that a wipe has been used.

(3) A revolving motor car wheel to man driving car calls for an iris wipe from the centre of the wheel. (See Fig. 2).

Where the scenes are comparatively short, I strongly advise duplicating the complete scenes when wipes or mixes have to be made and inserting the whole of the duplicate negative in the reel. By this method, the jump due to slight change in quality between original and duplicate negative is thus eliminated.

SUPERIMPOSITIONS

To be effective, superimpositions should convey their meaning clearly. Unfortunately they often leave the cinema audience slightly perplexed and continuity suffers in consequence, so use them with great care. They provide a unique method of creating atmosphere or of driving home a point. A simple but effective superimposition was shown in "Red Wagon," where the progress of a trick circus rider from obscurity to fame was indicated by a close-up of horses' legs trotting along, over which were super-imposed a series of inserts dissolving one into the other. Allied to this were the sounds of horses' hoofs and jingling bells, the whole co-ordinating to produce the atmosphere of the sawdust ring.

A lifelike shot of the interior of a cinema, with motion picture showing, can be produced by taking a scene of the interior of a cinema, minus picture, and superimposing a series of shots on the screen by means of the optical printer. These shots, of course, will have to be reduced to fit in with

Fig. 2—By courtesy of B.I.P. from their film "Medicine Man."

the size of the screen. Superimposing is also made use of where titles are to appear over scenes which have been taken during production.

ENLARGING — REDUCING — SPLIT SCREEN WORK — CONTACT PRINTS

Enlarging is of great help in saving re-takes. Often the microphone or some other objectionable detail inadvertently creeps into the picture. A simple enlargement on the optical printer will usually get rid of the trouble.

Reducing comes in handy when one or two scenes have to be shown on the screen together. It is also frequently employed in conjunction with some other optical process, such as superimposing.

Split Screen Work.—By this method an artist playing a dual role can appear in the same scene twice. Care should be taken when taking such scenes to include some vertical lines in the background to help hide up the join between the two sections. Actually, split screen work is best done by the Cine-camera when the scenes are being shot, because the duplicate negative which is necessary with all optical work is thus eliminated.

Contact Prints for back projection must be perfectly steady, otherwise the defect in many cases will be obvious in the finished back projection shot. The optical printer is fitted with registration pins, which ensure a perfectly steady print.

REVERSE ACTION — REVERSE FACE — SPEEDING UP — SLOWING DOWN

By reversing the action, it is often possible to use a library shot, thus saving the expense of taking a special scene. For example, a shot of machinery starting will, in reverse action, give the effect of machinery stopping. A man climbing up a ladder will appear to be climbing down. This asset of the optical printer is also frequently employed in comedy films to produce absurd results, such as a man running backwards, falling upwards or with his hat blowing on to instead of off his head.

Reverse Face is the method employed to alter the direction in which an object is facing or travelling in a given scene, so that it matches with scenes that come before and after in the cut reel. Supposing you have a long shot of a train travelling past certain buildings and a library shot of those buildings taken from a train travelling in the *opposite* direction. As you wish to use your library shot in conjunction with the former scene and maintain the same direction, it would be necessary to have a reverse face duplicate negative made from the library shot on the optical printer.

Speeding Up or **Slowing Down** the action is self-explanatory. The dramatic quality of a scene is often greatly improved if the action is speeded up, as in the case of a train or car smash. The same applies in scenes similar to those of motor bandits being chased by police cars. Tracking and panoramic shots often benefit by a slight speeding up or slowing down. This latter method, *i.e.* slowing down, was used to great advantage in the film "Royal Calvacade," produced by B.I.P. in commemoration of the King's and Queen's Jubilee. Much of the old material used in the film had been taken when cine-cameras operated at 16 pictures per second. The modern sound projector running at 24 pictures per second made these scenes appear rapid and jerky, especially where people were walking. By slowing down the action this fault was rectified.

FOLLOW FOCUS or TRACKING SHOTS

It is often thought that a scene which has been shot "straight" would be improved if converted into a tracking shot. This can be done on the optical printer by gradually enlarging the picture, while retaining the focus, until a certain figure or object already decided upon is brought into prominence. This method, called "follow focus," can also be used to join two scenes together in a manner similar to the following :—Supposing we have an exterior night shot of a house with one window lit up and an interior tracking shot of a room containing a long table where guests are at dinner. The camera in this second shot has tracked the full length of the table to the person at the head of the table. By tracking up to the window on the optical printer and mixing to the second shot, an effect is produced of having been taken up to and passed *through* the window into the room, then along the table, until we are looking at the diner in close-up, who is at the head of the table.

I have now outlined briefly the more important uses to which optical printing can be applied. In addition there are numerous occasions when two or more of the above-mentioned methods can be used in combination. It is here that the ingenuity of the film editor and optical man working in close co-operation can produce some remarkable results. There are also many occasions when collaboration between camera man, film editor and optical man are very necessary. I personally find that the best camera men and film editors do this, and they, knowing the value of the optical printer, make full use of it.

In conclusion, remember that optical work is at its best when least obvious, so try to make this your aim and your productions will benefit accordingly.

Publicity

MEMBERS will be interested to know that *Variety* recently invited Mr. George H. Elvin to write an article on the work of the Association, which appears in their bumper New Year issue. Regular news of activities appear in the *Cinema*, *Daily Film Renter*, and *Kinematograph Weekly*. *The Cinematograph Times* has also published occasional news. The *Bulletin de Artisans Francais du Film* has published correspondence from our Secretary. The lay press has also published news from time to time. Regular notes appear monthly in the cinematography supplement of *Photography*. A.C.T. is very grateful to all these publications for their support.

The Association took a page advertisement in the New Year issue of *Cinema* and a quarter-page in the *Kinematograph Year Book*. A page is taken quarterly in *Spotlight*.

British Kinematograph Society

The Society announces the following programme for 1936 :—

Feb. 3—"Before 1910—Kinematographic Experiences."
Mar. 2—"Technique of Cartoon Films."
April "Lighting for Colour Photography."

New Type Condenser Microphone

THE condenser microphone and amplifier consists of the condenser microphone proper and a one-stage amplifier arranged for central supply of the necessary voltages along a five-core screened cable.

The condenser capsule is supported in a bayonet socket at the base of the amplifier, enabling quick change of the microphone for testing or replacement purposes.

The amplifier itself is normally incorporated in the cylindrical case, which case can be slipped off its frame at any time to examine the amplifier or to change the valve.

A plug is fixed at the top of the frame for direct connection to the five-core cable, which should be fitted with the necessary socket.

The metal work is mainly in duralumin.

Details of Performance.

High quality microphones of various types are now in use for broadcasting, talking film production, gramophone recording, public address and a number of other purposes.

The requirements of an ideal microphone can now be clearly defined :—

(A) It must be reliable, light and small.

(B) Its output for the same input must be practically constant and under extreme ranges of strength its input-output curves must remain linear.

(C) Its frequency response characteristic must be constant under the same conditions.

(D) Its efficiency must be sufficiently great to remove to an inaudible level any ground noises, and it must be capable of being moved during reception without parasitic noises being produced.

Taking these requirements in order, the microphone meets them very well.

(A) The well-known faults of condenser microphones due to insulation troubles have been taken care of mainly in two ways. This microphone has a very high order of sensitivity and in consequence the amplification required is fairly low, so that any parasitic noises are not greatly amplified.

In addition, the polarising voltage is low—only 50 volts, and this in itself tends to minimise leakage effects. Extreme care has also been taken to minimise all surface leakage.

The active diaphragm itself is constructed of a very highly insulating material coated with metal on the outside, and this insulation is sufficient to prevent any noise being produced even when contact between the diaphragm and its electrode occur or particles of dust get between them.

The amplifier attached to these microphones has been very carefully designed to give reliability, but it is also extremely accessible for valve changing or in case any trouble is suspected.

A special valve is employed, and the construction of this valve gives a low value of valve hiss and microphonic noise.

In addition, the output transformer is a patented astatic shielded type, particularly free from all induction troubles even when placed quite close to electrical or magnetic fields.

Plug sockets have also been designed to give great reliability, solid plug and spring sleeve connection being used.

The microphone itself is quickly and easily inserted or removed from the holder if trouble should occur and the holders are designed to give maximum insulation and freedom from moisture troubles.

The microphone holder is hinged and permits of either horizontal or vertical use, and the complete amplifier may be used in any position ; it can be suspended from a boom or fixed the opposite way up on a stand.

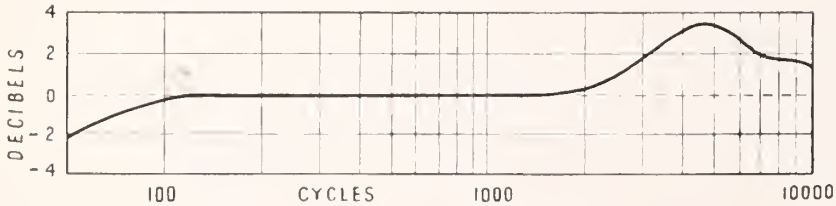
The overall length of the microphone is $12\frac{1}{2}$ inches, the diameter is $2\frac{3}{4}$ inches, and the weight 3 lbs.

(B) The condenser microphone remains practically constant in output over great ranges of temperature—any serious change in output would indicate a serious fault.

The output of the microphone and its own amplifier arranged with a correct input transformer to the grid of the first valve of the main amplifier, is about ·1 volts for normal speech at nine inches distance (1 dyne per square centimetre). As the microphone amplifier gives an amplification of about 5, this means that the microphone proper gives about ·02 volts for speech at nine inches. An output considerably greater than that obtainable from older types of condenser microphones, and this with only 50 volts polarising.

An excessive sound of 30 to 40 dynes per square centimetre such as given by a singer at three feet, or a large orchestra, will thus give a swing of about 1 volt on the amplifier, which is about its safe limit on 50 volts, and any greater sounds would have to be taken care of by increased voltage on the amplifier itself, with corresponding increased grid bias, otherwise results will not be linear.

Exceedingly weak signals can be taken care of quite easily—some recent tests indicate that speech in the open air can be heard and understood at distances of more than twice that at which the normal ear can hear and understand—without the use of any concentration. Normal speech at twenty feet is free from any appreciable ground noise.



NORMAL CURVE OF MICROPHONE AS TAKEN BY ELECTROSTATIC METHODS

Fig. 1.

(C) The frequency response curves of the microphone are interesting. Measurements by the electrostatic method (not free air curves) indicate a standard characteristic as shown in Fig. 1 for the microphone and amplifier.

The free air characteristic Curve A (Fig. 2) taken along the axis of the microphone indicates a pressure rise due to the dimensions of the microphone.

Two practices are now available with this microphone. In broadcasting the correct thing to do is to transmit with an effectively level curve and the microphone is arranged to do this by the use of layers of silk placed in the screw cap.

Various layers of a particular silk placed in the cap in addition to the existing guard layers permanently arranged in the cap reduce the axial response of the microphone to the curves shown in Fig. 2.

The microphone diaphragm being only one inch diameter suffers very little from polar diagram effect, these effects being less than half those of a normal three-inch diameter microphone and the angle of perfect reception is quite large.

By slipping a two and a half inch baffle on the microphone and not using any silk masking other than the protecting silk, a response curve is obtained which just nicely balances film losses up to 6,000 cycles, with only a slight drop above this. This baffling provides a rise of amplitude starting at 1,500 cycles instead of at 2,000 cycles—the total rise being about the same.

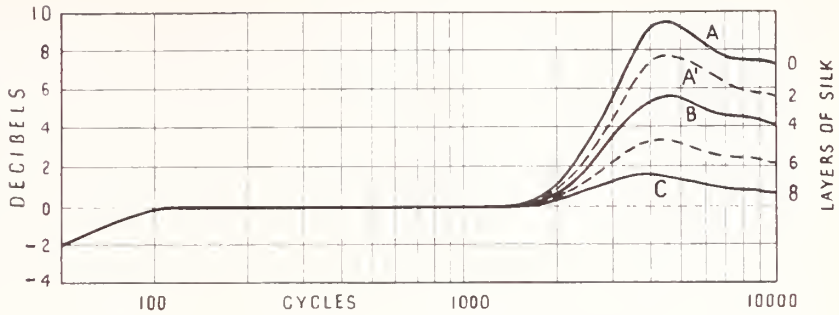
If the microphone is to be used vertically downwards above groups of people, it is probably advisable to give a slight rise of, say, 3 d.b. up to 5,000 cycles to the main amplifier, although there is no real necessity for this.

Some film recorders are already constructed with the necessary equaliser in their amplifier for film loss, and in such a case the microphone should be used as in broadcasting.

(D) At the very worst the amplifier requires 100 d.b. gain to give 1 milliwatt of ground noise. As speech at nine inches gives 1 milliwatt at about 26 d.b. gain, all ground noise is negligible here. At eight feet there will still be about 50 d.b. difference and possibly 70 d.b. if conditions in the amplifier are at their best, and at eighty feet there will be a difference of level of at least 20 d.b. and possibly 40 in favour of the speech.

This indicates why it is possible to receive speech at considerable distances in the open air with this microphone.

When correctly suspended the microphone can be moved about to any extent without the production of noise.



A WITHOUT SILK A' WITH SILK AS NORMALLY FIXED.

B WITH FOUR LAYERS EXTRA SILK C WITH EIGHT LAYERS

Fig. 2.

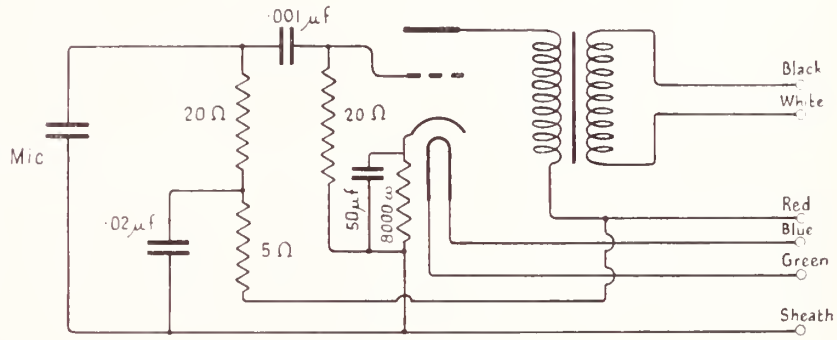


DIAGRAM OF CONNECTIONS

Fig. 3.

Diagram of Connections

The diagram of connections of this amplifer is shown in Fig. 3.

For those whose main amplifer is of low gain, sub-amplifier to give an addition to the microphone amplifier can be supplied. This sub-amplifier is fitted with a key throwing in a—10 d.b. or—20 d.b. attenuator in front of the valve, to take care of exceptional strength conditions.

The First British Picture Show

M. Lumière, the Inventor, to Repeat the 40-Year-Old Program of Original Movies

Britain's first kinematograph show will be repeated at The Polytechnic, Regent Street, on Thursday, 20th February, 1936, when M. Louis Lumière, its inventor, will be present at the re-enactment of the original entertainment presented by himself forty years ago. It was on the 20th February, 1896, that that historical event took place, as recorded in the contemporary "Polytechnic Magazine."

> "It is briefly living photography, if this term may be used, thrown on a screen in the same way as are dissolving views by the oxyhydrogen lantern. The effect is really most wonderful.
>
> For instance, the photograph of a railway station is shown on the screen, two or three seconds elapse and a train steams into the station and stops, the carriage doors open, the people get out, and there is the usual hurrying and scurrying for a second or two, and then again the train moves off. The whole thing is realistic, and is, as a matter of fact, an actual photograph."

Already France, Belgium and Holland have honoured M. Lumière by fêteing the man who first presented to the paying public moving pictures on celluloid and projected them on the screen.

It is intended by The Polytechnic that the celebration should take the form of a two days' Exhibition devoted to a display of the varied kinematograph apparatus incidental to development of moving pictures, lent by Mr. Wilfrid E. L. Day, the well-known screen-historian, who, in addition, has undertaken to present the actual twelve films originally shown by M. Lumière 40 years ago, on the identical projector used on that historic occasion.

Among the leading features of the Polytechnic Exhibition will be a display of the latest kinematograph equipment, and screen shows are also being arranged by famous studios who will present excerpts of their most notable pictures.

Experience Teaches

Eight Months in Hollywood

By LIONEL K. TREGELLAS

EVERY intelligent technician wants to extend his knowledge, to see what other countries are doing in their studios and how they do it, and to study the different psychology of other races in order to cater for them. His continued employment depends entirely upon the maintenance of a market for his product, and, as time goes on, this market's demands become more and more difficult to satisfy. Good pictures enjoy a world market, and every business man should have an intimate knowledge of his customers and their requirements. So it is in the motion picture business.

Hollywood attracted me as the biggest production centre and the "Mecca" of picture people. I was curious to see what "made it tick," the kinds of people it used and what their minds were like. So, in the name of Experience, I took the chance, left my employment in England and hit Hollywood last July, with an open mind and receptive ears and brain. Letters of introduction, I found, were of little use—I was employed at one of the few studios to whom I had no letter.

Employment in Hollywood seems to be in three classes; a permanent staff that remains at the same studios year after year—the backbone; a number of specialists who move from studio to studio, and a huge floating staff of all kinds of technicians who can do any work at a moment's notice. Salaries vary enormously. You are engaged by the day, week, run of picture or long contract on a varying scale. In general, salaries are higher than here, with overtime after a certain number of hours and for Sunday work—of which, by the way, I saw very little.

Hollywood seems to have no objection to foreigners. In fact, the studios are full of them, and I was surprised at the number of English people I met in all branches of the work. Unless you are prepared to live on your means for a couple of years, whilst breaking into an expert and crowded market, a trip to Hollywood must be treated purely as experience. Happily, they have no objections to showing their equipment and explaining their methods. At least, I found no trouble in seeing what went on and how, and was even introduced to "Micky Mouse."

I spent some time in each major studio and my impression is that, over a long period, Hollywood has bred a race of picture-minded people, who, in spite of all upheavals in the industry, manage to turn out a continuous stream of good films, and occasionally a great one. I had known for years that she prepared well before shooting—that was obvious from many of her pictures—and I found that she would rather delay, in most cases, for many weeks rather than shoot on an unprepared picture. Money was considered better spent on preparation than wasted on churning out film on the floor, upsetting personnel and artistes, and disorganising the shooting. On "A" Class Pictures she does not seem to care how much is spent as long as the finished job *is* "A" Class, though on program or "B" Class films the budget is usually strictly limited. The story is considered of great importance and a point is made of having plenty of good writers to whom big money is paid. Hollywood, at present, is performing miracles of cutting and dubbing, as any student of motion-pictures can see, and the improvement in this respect, even during the past few months, is astounding. Clean technical work seems to be the aim and the technician is given every chance to do his work perfectly.

There are Associations of Technicians in Hollywood, but, apart from the Cameramen's Association, there are none of great importance, other than the ordinary trade unions. The N.R.A. did, and probably still does, control the working hours of all but the "key" workers. Co-operation is effected through the Academy of Motion-Picture Arts and Sciences, which has sections for the various departments.

I think that both Hollywood and England have much to offer each other. Progress in film work depends on the interchange of ideas and no one studio or country can stand alone. Good films should be international in their appeal and this can only be accomplished by a knowledge of every country's likes and dislikes. World co-operation is necessary. Technicians should move around or their work will become stereotyped and progress is too important to let this happen. From my experience and observations I prophesy that in the future there will be more time, care, and money spent on "A" class productions, an increasing number of good short subjects filmed, with less and less "quickies" and quota pictures. If a subject or "treatment" is not good enough for a first-class production, it is not worth doing at all. We must continually raise the standard of screen work and avoid making it a "cheap" entertainment. That way leads us back to the nickelodeon days. Although we have new people always reaching an age when they will become cinema patrons, we must realise that they are becoming more and more intelligent for their age, so that it is only by watching the box-office effect of each picture and producing accordingly that we can make the industry a commercial success and keep that "edge" on public requirements. Cinemas in large cities will be classified as legitimate theatres are to-day.

I found that America is acquiring a liking for English-made pictures. If we can send them a continuous supply of first-class films, and ensure that they are not stale by the time they are shewn, we should have no difficulty in securing a large American market. I saw English pictures in the States that were two years old and, as there is seldom any indication as to when a picture is made, these were naturally judged against the latest American productions—and suffered accordingly. Speed in releasing is essential.

To conclude, I found nothing in the States which led me to believe that the average ability of technicians is higher there than here, although, of course, America has more experts. It was the attention to detail and care in preparation that impressed me.

A.C.T. Provincial Section

ROLAND DAVIES, of "Come On, Steve" fame, has recently formed a cartoon unit. Most of his staff was engaged through A.C.T. and the Association now has its first provincial Studio Committee, at Ipswich. We hope to publish further details in our next issue.

Gamma

By C. J. PHILLIPS

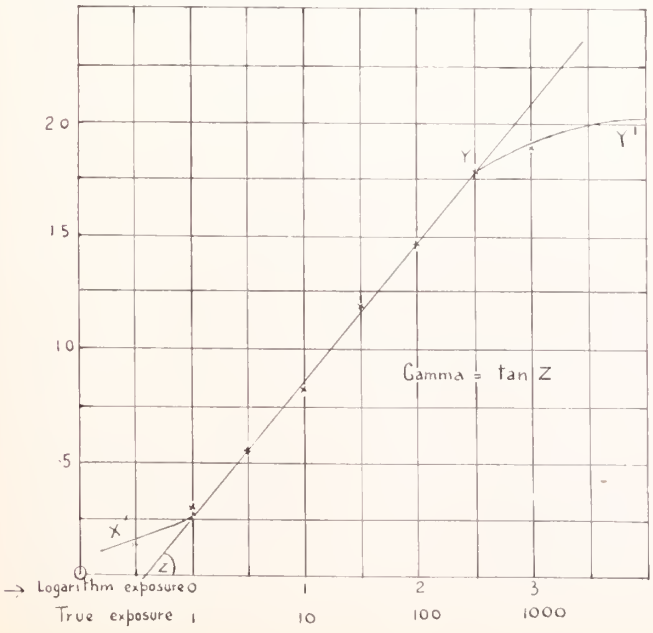
I MAKE no apology for writing a few words on one of the least understood, but one of the most important terms in the whole technical vocabulary of the photographer.

It is a curious fact that until a few years ago—that is to say, shortly after the introduction of the sound film—"gamma" was an all-American commodity useful only to the manufacturer of photographic materials. Then America, having apparently seen some of our films, and heard some of our sound, set out on a crusade to make the English cinematographer "gamma-conscious." I am convinced that the success of this campaign has done so much to improve the technical quality—the polish—of the product on this side of the Atlantic that to-day the output of the major British studios and British laboratories can challenge comparison with America's best work.

But there still remain badly-equipped laboratories and badly-equipped customers. Many times recently I have been surprised to have been asked the question: "What is Gamma?" by people who quite obviously should have known better.

Gamma is quite simply the relationship between a series of exposures and the corresponding series of densities to which it gives rise. Just consider for a moment how vitally important this is to the cameraman and the sound expert, especially if the latter be working with a variable density recording system. As this relationship is almost entirely dependent on the extent of development of the photographic image and is therefore controlled by the laboratory, the cameraman must in self-defence be satisfied that the laboratory is giving him a fair deal. He can easily put himself in a position to be sure of this by learning to understand the laboratory man's "foot-rule," his gamma curve.

In order to calculate gamma, the laboratory must be equipped with two vital and expensive instruments—a sensitometer and a densitometer. The former is an apparatus for impressing on a sensitive emulsion varying exposures in a series of steps of a definite ratio. A strip of film is therefore exposed on this instrument and processed under the same conditions as the reel of negative or positive film about to be passed through the developing machine. Sometimes it is actually attached to the reel itself. The dried strip is then placed on the second instrument—called a densitometer—and the density value is ascertained for each exposure step. By plotting on a graph the logarithms of the exposures against the density values, we arrive at a curve that looks something like the one shown below.



This curve is of practical interest only in so far as the straight portion X Y is concerned; for gamma is the value of the tangent (*i.e.* the value of the angle) that the straight line portion of the curve when produced makes with the base. X^1 X, the toe, and Y Y^1, the shoulder, are both beyond the range of the stock being used and show respectively extreme under and extreme over-exposure. Negatives suffering from either have their contrast values badly distorted.

It is obvious the greater the slope X Y, the larger the tangent of the angle Z, or gamma, and the higher the contrast, and conversely the less steep the slope the smaller the tangent of Z.

Provided the photographic stock is correctly exposed, the slope of this curve is entirely under the control of the developer. Obviously a negative can have its delicate shades of light ruined by unskilled processing.

When we look at a photographic image and protest that it is too hard or too flat, we are complaining that the slope of X Y is incorrect, that the gamma is too high or too low.

In the laboratory two conditions must be satisfied before gamma can be correctly controlled. Temperature of solutions must be maintained within very narrow limits, and the activity of the developer must be constant, which means that replenishment of used solution must be accurately regulated. With modern high-speed developing it is quite impracticable to judge a photographic density by inspection, so that time and temperature processing is the only possible method. Anyway, the older method is far too dependent on the human factor.

All makers of photographic stock will supply data on the correct gamma to which the particular type of stock you are using should be developed. If the laboratory fulfils these conditions and develops the reel of negative to a time that gives a correctly sloped straight line, *i.e.* correct value of tan Z, from the sensitometer strip, then their responsibility ceases. If the result is unsatisfactory, it is because too much of the exposure lies in the toe or shoulder of the curve and this is entirely the fault of the man who put the exposure on to the film.

The cameraman or the recording engineer must stop asking the laboratory questions about how long their negatives have been developed, or what the temperature was, or what the developing fluid is called, and must substitute the question: "To what gamma was my negative developed?" The laboratories in their turn must be sure of their answers.

The Polar-Screen

MR. I. D. WRATTEN of Technical Service, Kodak Ltd., delivered a remarkable lecture on the "Polar-Screen" to A.C.T. members on January 20th. We regret that it is impossible to print a report of the lecture in this number of the *Journal*, but it is hoped to publish an illustrated verbatim report in our next issue.

Some Motion Picture Aspects of Illumination Engineering

By T. S. LYNDON-HAYNES,

Corporate Member of the Illuminating Engineering Society

THE large part illumination plays in modern motion picture production, from the low wattage exciter lamp in the sound camera to the 10 kilowatt lamp on the studio floor, is little realised by the cinema technician. Light is taking an increasingly important hand in film production, and there is little doubt that the demand for high wattage lamps from the studios has influenced the research which is now apparent in the quality of modern commercial and decorative floodlighting—as well as in the fine Standard of workmanship which characterises the studio product.

With the advent of colour photography, the studio lighting expert will learn to rely upon the everyday instruments and practice of the illuminating engineer. He will use photometric control on his lighting, since the eye cannot respond to coloured light with the same relativeness in regard to film stock as it does to the ordinary so-called white light.

Sensitometry has already made its way into the film laboratory and has resulted in the gamma control of film developing. It is perhaps the sound camera operator who reaps the greatest gain from the sensitometric control which daily solves for him the problem of exposure.

The diversity of the lamps used in a film studio strike one at first glance as almost bewildering. On the floor there are 250w, 500w, 1Kw, 2Kw, 3Kw, 5Kw and 10Kw lamps. Spotlights are used with projector type bulbs and in the floodlights are 500w, 1500w and 2500w draped filament bulbs. In contrast to studio requirements, commercial floodlighting calls for a greater variety of lamp housings, which must be considerably more robust than their studio counterparts, since they are used in the open for permanent or semi-permanent erection and, apart from the necessity of being waterproof, they must require minimum maintenance. The reflectors in use for floodlighting are facet mirror, parabolic, set-back parabolic and assymetric, and it is interesting to note that the assymetric and set-back parabolic types have not yet found their way into the studio.

Colour flood-lighting, which is divided into two parts—flood-lighting of coloured objects and the colour flooding of plain objects—is not much advanced in this country, but in the U.S.A. there have recently been seen some very striking examples, particularly at the Chicago World Fair.

Thus in a short time the studio lighting expert will have a fund of information available to assist him in the difficult task of lighting for colour pictures and it is hoped that he will not neglect the opportunity so offered.

The coming of sound lessened the use of arc-lighting in studios and so the variety of arc-lights may be regarded as a legacy of the silent days when all lighting was of this type. There appear to be two schools of arc-lighting—the Continental and English styles. The equipment of the former consists of the 1000mm. reflector sun arc drawing 300 amps., controlled on its resistance by 2×75 amps. and 6×25 amps. switches, the 700 mm. arc drawing 160 amps., with 2×60 and 1×40 amp. switches, the 500 mm. arc drawing 80 amps., with 4×20 amps. switches, and the 300 mm. arc drawing 30 amps. The millimetre rating refers to the diameter of the appropriate parabolic reflector, but a facet minor may be used as an alternative. The Continental School also uses the 12″ condenser spot drawing 150 amps. with 6×25 amps. switches, the 6″ condenser spot drawing 75 amps, the 4″ condenser drawing 35 amps., and finally overhead are domes drawing 25 amps., 50 amps. and 150 amps.

The English style embraces the 300 amp., 150 amp., 80 amp., and 40 amp. auotmatic feed rotary arcs and parabolic reflectors, with facet mirrors not in general use. The spotlights are the 4″ condenser drawing 10 amps. and 20 amps., the 6″ condenser drawing 75 amps., the 8″ condenser drawing 80 amps and the 12″ condenser drawing 120 amps., the last two being of the rotary automatic feed type. These two styles are, of course, to some extent interchangeable.

Diffusion for arc-lights, as well as incandescents, is divided into three parts—the American, the German and the English. The American materials are gelatine, wire gauze, tracing paper, and silk ; the German are hammered, florentine or cathedral, and frosted glasses, whilst the English theory comprises the American and German formulae with the additional use of cheese-cloth and net.

Another use of arc-lighting in the film industry is in the projection of the picture itself where an arc-light drawing 25-150 amps. at 100-110v is used in the theatre, whilst for back-projection the rating is advanced to 200-250 amps. The current in both cases varies in proportion to the throw. Incandescent light comes in again in the shape of a horizontal spiral filament exciter lamp of about 32w in the sound head.

For lighting on the floor the usual supply is 110v D.C., and a typical way of obtaining it is by transforming the main supply, which is generally 50 cycle 3-phase at 6600v, down to 230v to drive rotary convertors giving 110v D.C. output. In some studios, alternating current is used for floor lighting,, but the A.C. fields frequently interfere with the sound apparatus and this is a big argument against its use. Another alternative is the 3-wire system, but this has the disadvantage of needing continual supervision to balance the load. For the exciter lamp in the sound camera a 4v supply is usually required, whilst the sound head exciter is generally 8-10v.

House lighting is almost invariably 230 A.C. and it is a feature of film studios that the offices, recording rooms and workshops, etc., are generally badly lit, and far too little wattage is used.

In conclusion, it must be remembered that progress in illumination will always advance its sister science, photography, and in support of this motion-picture radiography, micro-cinematography, contemporary experiments with polarised light, and the trend of phometer design may be quoted.

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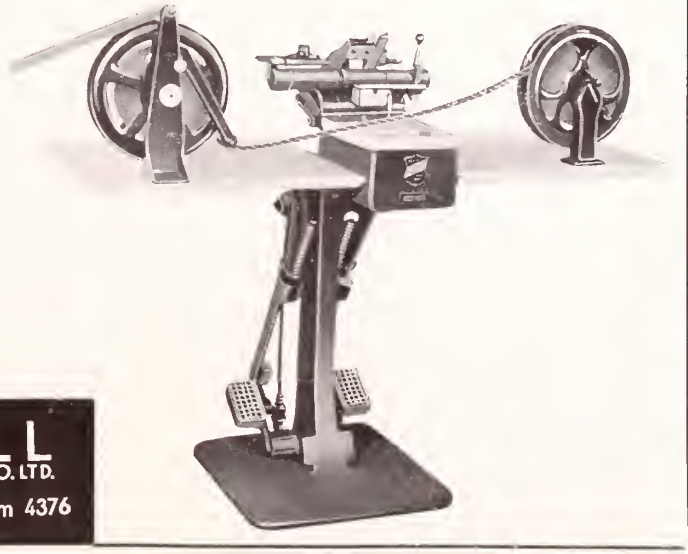

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Cash and Credit

By JEAN ROSS

HALF the good workmanship put into British films is nullified by the fundamental weakness of our scenario work. There may be other branches of film technique in which—usually for reasons of economy—inexperienced people have been engaged to do the work of qualified technicians, but nowhere is this more frequently found than on the scenario side.

Heaven knows that as long as the problem of apprenticeship remains unsolved we can expect nothing else.

If studio executives could bring themselves, or be brought, to take this problem of scenario writing seriously, they would be astonished at the general improvement. Few studio executives yet seem to realise the importance to a film of a well-written, technically practicable scenario. If there is any question of cutting down costs, their immediate impulse is to economise on the scenario.

I know of one case where a producer decided to do this by writing the scenario himself. He had a financial interest in the production and had engaged one of the most expensive stars in the country. To justify big expenditure on the star he had to get a big director. When the "big directors" saw his script, they weren't having any. Result—one week before they were scheduled to go into production, he manages to get a big Continental director who agrees to direct on condition the film is entirely re-written by genuine scenarists. Money wasted in this case would have paid two scenario writers' wages for two years.

Because they underrate the importance of the scenario—some of them seem to regard it more as a formality than as a practical necessity—studio executives make another common mistake. When economy is not the main consideration, and they want "someone good" on the scenario, they turn inexplicably to a profession about as far removed from scenario-writing as portrait painting is from architecture—to the ranks of the novelists or playwrights to find "someone good." The fact that a man has written a book and had it published is to many of them not only the hallmark of supreme culture, learning, wit and whatnot, but also conclusive proof of his ability to write a scenario.

We get, therefore, as a result of this policy, famous and less famous literary lights, totally ignorant of film-making, receiving all the credit and most of the cash for scenarios that are technically impossible to use. It is then the heartbreaking job of the studio's regular scenario writer to endeavour to knock the novelist's "scenario" into some kind of technical shape. This often entails scrapping the whole thing and entirely re-writing it, but for this there is not always time nor indeed the inclination.

For what is the position of the scenario writer in the studio? Let us presume, as this is usually the case, that he has come to the scenario department through other branches of film technique, that his main qualification is that he knows how to write a script, that he sees a story in terms of pictures, knows just what is involved and what is needed in the getting and setting together of these pictures, not that he is a writer in the literary sense of the word—beyond the fact that he can express himself clearly and competently in writing. Studio executives, because they have only the haziest glimmerings of what a good scenario should even look like, because they do not, in this country at least, realise that scenario-writing is not a job that can be learnt overnight, but requires as much technical knowledge and experience as cutting, directing, sound recording, photography, etc., have lowered the professional status of the scenario writer to the level of a literary ghost.

He is badly paid, overworked, and though he really writes the script, he frequently gets no mention even in the credit titles. Scenario writing in this country is nothing less than a blind alley occupation.

Scenario writers will wait in vain if they expect that studio executives will change these conditions at all. As long as films continue to pay, the studio executives will do little to improve the methods of film production. It is only we, whose livelihood and reputation depend on improving the general level of British films, who can and must change these conditions.

It will be in the interests of all serious technicians in the industry to build up the standard of scenario-writing—(a) by ensuring that the qualified scenario writer will be allowed enough time to enable him to work competently and that he receives full credit for his work; (b) by insisting that novelists and others engaged to write scenarios should at least have had six months of practical experience working in the studios.

This last suggestion may sound faintly blasphemous to studio executives and disturbing to those "scenario writers" whose only interest in films is as a source of easy money. But as one of the finest poets in this country, W. H. Auden, has already agreed to do this (in the G.P.O. unit), I see no reason why other writers, if they are serious about wanting to write scenarios, should refuse.

New A.C.T. Sections

LABORATORY and NEWS-REEL sections have been recently formed and the Association of Cine-Technicians now caters for every technical branch of the film industry. Both the new sections have been welcomed with enthusiasm by the technicians concerned and membership is most satisfactory and growing daily.

Both sections are autonomous bodies, and officers are as follows:—

Laboratory Section.

Chairman—Mr. C. J. Phillips.

Committee—Messrs. A. Jay and P. Knights (Gaumont-British); R. Pugh and P. Coe (Fox); S. Twyman and H. Craik (Elstree Film Laboratories); G. Hughes (Olympic); F. Fuller and W. Sharp (Pathe); G. Allnutt and L. Cass (Humphries) and J. Franks and S. L. Woodcock (Film Laboratories).

General Council Representatives—Messrs. C. J. Phillips, H. Craik and R. Pugh.

News-reel Section.

Chairman—Mr. J. G. Gemmell.

Vice-Chairman—Mr. A. Tunwell.

Committee—Messrs. F. Bassill and L. Maskell (Pathé); T. Cotter and P. Wyand (Movietone); J. Humphries and R. L. Read (Gaumont); J. F. Gemmell (Paramount); F. E. Miller and F. Wilson (Universal); J. Hodgson (March of Time) and H. Starmer and J. Hutchins (Free-lance).

Important for A.C.T. Members

The following are the main points covered in a letter sent to all A.C.T. members on 4th January, 1936 :—

Annual General Meeting.—Notice is hereby given that, in accordance with the Association's Rules, the Third Annual General Meeting of the Association will be held on Sunday, May 10th, 1936. Details as to time and place will be announced later.

All paid-up Members of the Association are entitled to attend the Annual Meeting, and it is hoped that every member will make a special effort to be present.

Subscriptions.—The financial year of the Association has been altered to close on December 31st in order to bring it into line with the statutory financial year. New Membership Cards are now available and may be obtained from Studio Secretaries. Free-lance members should return their old cards immediately to head office, when a new one will be issued. A remittance to cover arrears should be enclosed.

It is essential that any member in arrears should clear his card immediately as the Council is meeting early in the New Year to consider all cases of lapsed membership or members more than five weeks in arrears, when action in such cases will be considered under Rule 15.

"**Journal.**"—The first volume of the "Journal" is completed by publication of this issue—No. 4. Details of binding cases for those desiring them are published below.

Subscribers to the first volume should note that their subscriptions have now expired and a further 2/6, or 3/6 for non-members of A.C.T., should be forwarded, or handed to a Studio Secretary, if regular postal subscription is still desired.

Badges.—A new supply of badges is now available and may be obtained from Studio Secretaries or from the Association's office, price 9d each.

Dance and Cabaret.—Many members have expressed a desire for an A.C.T. dance. The General Council has therefore made arrangements to hold a Dance and Cabaret on Shrove Tuesday, February 25th, at Chiltern Court, Baker Street, W.1, from 8 p.m. to 2 a.m. Tickets are 5/- each, and are now available from Studio Secretaries or direct from head office.

News-reel—Brookland Race

Early in February, when the Brooklands Motor Racing Track re-opens after renovation, Movietone News will hold a car handicap race. Malcolm Campbell has handicapped the cars, and also presented a cup ; a prize has also been given by Mr. Bradley, Secretary of Brooklands, and Paul Wyand, Movietone's Car Racing Camera Ace, gives a cup for the last home.

The entries include Jimmy Sanger, Tommy Scales, Ivan Scott, B. B. Saveall, of the Editorial ; Terry Cotter, Jack Cotter, Alf Tunwell, Paul Wyand, Sid Wiggins, Tony Law, Pat Sunderland, representing the technicians.

The race will be under the auspices of Movietone News Racing Driver's Club.

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Designing and Manufacturing a Modern Cine-Camera

By W. VINTEN

The following is a paper read by Mr. W. Vinten to The Association of Cine-Technicians, Dec. 16th, 1935.

I WAS sixteen when I saw my first moving picture at the Alhambra. I had then served two of my three-years' apprenticeship to an engineer in Holborn. I was very intrigued, and decided to try for a job where such machinery was made, but nearly five years were to pass in heavy engineering, armament, confectionery, railway and motor works, before I succeeded in working for Newman & Gaurdia, R. W. Paul and, later, Charles Urban. That was thirty-five years ago. I have remained in the business ever since, and I am still intrigued.

The camera, together with the perforator, is one of the most accurate machines used in our exacting industry; but the camera has the added difficulty of having to respond immediately to artistic temperaments of users who are often paid big salaries, and therefore demand respect, but have no mechanical training. It is also expected to respond in all weather conditions, from going over Everest or the North Pole at a temperature of 40 degrees below zero, across African Deserts where the heat compels the operator to wear gloves to protect his hands from being burnt when touching the instrument; being stuck in the sea to take shots of waves coming over the lens, and then it is expected to run silently at the Cenotaph or inside Downing Street to give a perfect picture of all political parties at the same consistent quality and without a scratch—truly a scientific instrument.

These appalling conditions only apply to the camera. The camera is expected to carry on without expert service, without causing a blemish on the sensitive film stocks—a big enough job to intrigue anyone's ambitions!

For sixteen years all cameras were designed and made as a scientific instrument, that is, the mechanical parts were of sheet metal, with gunmetal castings, steel shafts, lacquer finished, and assembled in a wooden box that was either polished or leather-covered. The most popular were Darling, Williamson and Moy in England, and Debrie and Pathé in France, price being an important item in those days. By 1910 the film industry was largely in the hands of Americans with money to spend, with the result that the finest camera from an engineering point of view was produced by Messrs. Bell & Howell, in Chicago. New features embodied were, a four-lens turret, shuttle gate with fixed register pins, shutter fade-out, etc., but more important still—the factor that gave it leading position—was its all-metal construction, of high-class engineering design, taking full advantage of the use of the latest machine tools and new materials then being rapidly developed, due to the demand created by the motor car industry. This leading position, held for many years, eventually passed to the Mitchell camera, made in Hollywood.

Although not such a high-class engineering job, it was far more practicable and more foolproof. Another American camera which became very popular for exterior work, particularly on expeditions and in air-work, was the Akely, having new features especially developed for this class of work and embodying a gyroscopic action, built to the camera, for panning and tilting, also with a matched lens-finder worked in conjunction with the taking lens, mounted on a quickly removable panel. The camera had a single-pin feed motion, no register pins, used a friction gate, was bulky and conspicuous for its 200-ft. capacity. It was selected and issued as standard equipment by the United States to their photographic section with Army in France during the Great War. That war period allowed the U.S.A. to get and hold the major world's markets for cinematographic equipment.

When my works were released from control in 1919, I put a new camera out. It was an attempt to combine the best features of existing types. All-metal, it had a four-lens turret, direct look-through, hand and automatic fade, 170° shutter, had built-on rotary and tilt movements, 8 to 1 and 1 to 1 drive off the same handle by a gear change, and immediate reverse direct gear drive to both magazines, dispensing with belts, etc.; also it was very light in weight. This camera looked a promising baby, but soon after it was on the market I was unlucky in having it condemned because an operator had failed to fix the bottom magazine correctly. The little bit of bad luck condemned this model C in the studios, but several are still working on location and in laboratories on title-work in London, Manchester, and in India, Singapore, New Zealand and Africa. This incident cost me a lot of money and also had the effect of increasing what I call the "inferiority complex" of the British workers' views of British equipment.

As model C could not be condemned because a magazine, through being insecurely fixed, fell off, the single pin claw motion was put forward as being unsatisfactory, yet the same thing in the Akely is acceptable. After this serious setback I make no attempt to do anything in the way of a standard camera, although I made "specials" for colour work for Claude Friese-Greene and the late Mr. Hamberger. I also felt that a combined pull-down and register pin motion had yet to be developed that could be obtained from crank action instead of cams, and in my spare time I did some model making. The outcome was a motion having two cranks used on a high-speed camera for the R.A.F. In 1929 I made an improved model, using only one crank; it gave perfect results in balance, also it was exceedingly quiet in running. In 1930 our tender for the supply of a slow-motion camera running at dead 80 pictures per second was accepted by the Admiralty. The half-finished improvement on the R.A.F. camera was completed, and when tested was found to do the job remarkably well.

My sad experience with model C still made me afraid of the inferiority complex, and it was Mr. W. Haggett and my fitting shop foreman, Mr. W. Sadler, who induced me to have another try. It certainly was an opportune period, as the sound crews were continually reporting camera noise, despite the fact that cameras were in booths, or unwieldly blimps which handicapped the cameraman's efforts. Mr. Haggett's two years' experience under these trying conditions was very helpful, and his advice resulted in a new camera specially designed to meet these new conditions, the elimination of all fancy gadgets, including fade-out, no ball bearings, and elimination of gearing to the minimum. He also promised it should have a fair trial in the B.I.P. Studios, and this advice and offer decided me to go ahead.

The decisions to be made before going to the drawing board were as follows, and in order of importance :—

1. *Silence.*—Absolutely essential and, until we get the continuous camera, there will be noise from the loops of film at the top and bottom of the gate creating air displacement, ditto from the shutter and from the hum of motor. Some method of destroying or non-transmission of this noise must be introduced. Was it to be part of the camera or an accessory? I decided on the latter. There are three ways of destroying sound, by non-transmission (vacuum), by reflection or by absorption. I selected the two latter methods combined, because you can't hang a camera in nothing, also the continuous making and breaking of the vacuum bound to occur would create condensation. So I decided on a blimp that embodied the whole unit, made from materials that absorb and reflect. To keep noises down to a minimum I selected spiral gearing, one of each pair being of fabric and the other metal, gearing to be minimised as much as possible. One tough problem was, if I cut out the hand crank, I could dispense with a pair of gears. I decided to retain the cranking handle. I see on the new N.C. type Mitchell camera their designer took the other course to put plain bearings on all shafts running over 200 r.p.m., ball-bearings on all others, no fade, no gear control to the secondary shutter, just a simple hand adjustment to same. The case to be a toughened aluminium alloy not under quarter-inch thick anywhere, with a four-lens turret.

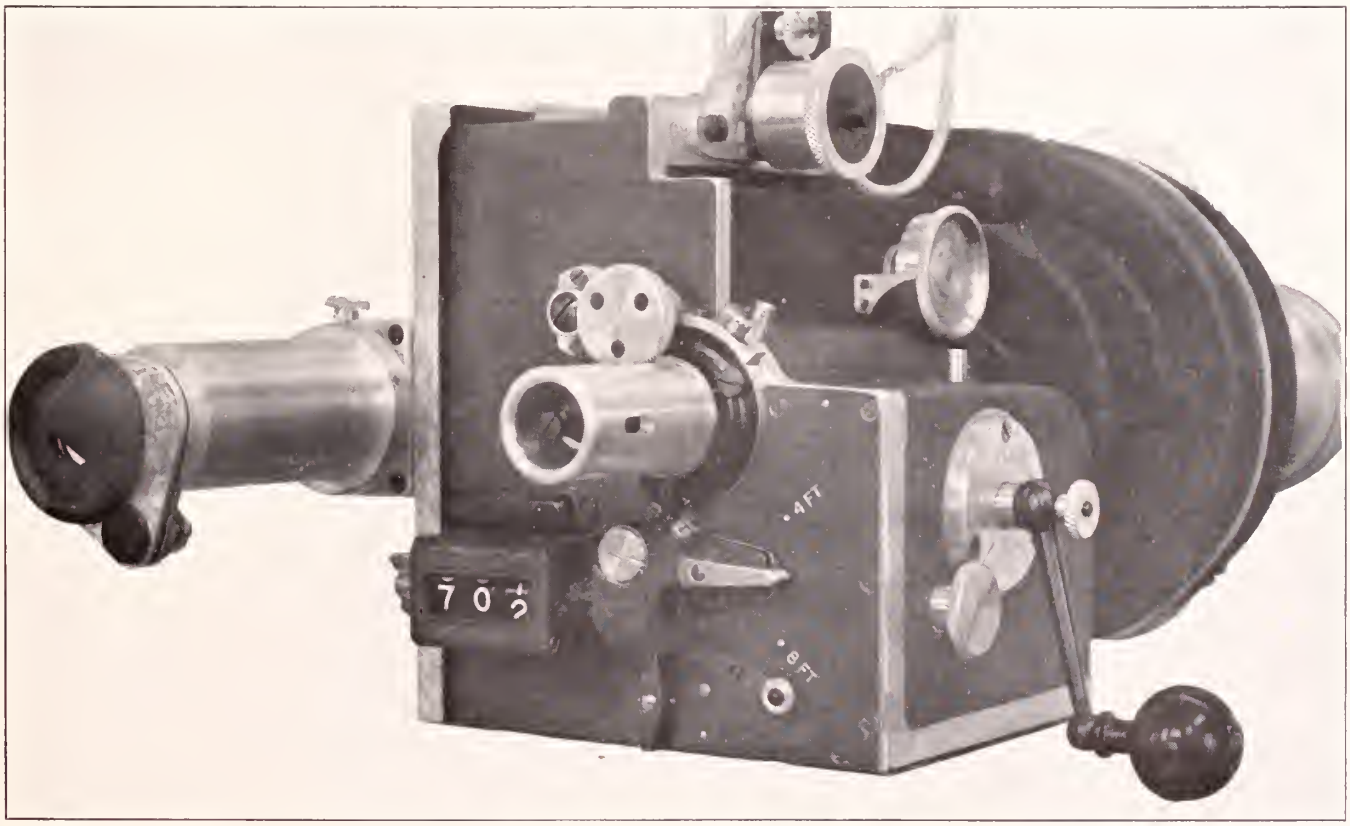
2. *Mechanical Vibrations.*—Here we have the very difficult task of balancing perfectly the reciprocating parts of the pull-down motion, but I knew that my new one, wherein the whole feed and register pins were operated from one crank, only with no gearing, eccentrics or cams, was a big advance on anything yet accomplished, and that the reciprocating parts practically balance out each other. Therefore the camera would be free from vibrations.

3. *Focussing.*—For a camera to be popular it is most essential that the film should be readily moved away from the exposure port, a ground-glass brought into the same position, and the image thereon highly magnified. I decided to move the complete gate and register pins horizontally, and as the film would then be badly out of alignment, to lock the camera motion until the gate returned to normal. The lenses to be in individual focussing mounts, mounted on a rigid turret with the lens and iris scaling, not rotating when operating the focussing movement.

4. *Framing the Picture.*—Something better than a finder on the outside of the blimp was essential when "following." The means of looking through the film or matched lens, or both, should be incorporated, as the latter had made the Akely so popular.

5. *Magazines.*—I decided on twin external type magazines, as the capacity can be varied without affecting the camera design. Also it gives greater elasticity of design when catering for colour. The take-up drive to be an endless cotton belt, with adjustable tension on the camera to permit 1000 and 400 ft. magazines, without changing the belt.

6. *Motive Power.*—This to be electric, the motor to be attached externally, not built in, and to couple direct to one of the two 1440 shafts without a special gear box. The motor fitting to contain a clutch or some mechanical fuse or slipping device, which would safeguard the motor and the camera mechanism, should the former be switched on when the latter had the ground-glass over the lens port.



MODEL "H" FADE-OUT CAMERA

7. *Minimum Essential Accessories.*—A bold footage counter of the set-back type, film punch operating on the side of the film and front attachments that attach to the front of the camera and not to the tripod. These should satisfy the main essentials for the operative cameraman. Next to consider in the design means for standing up to the severe conditions previously mentioned, I made the following list :—

Temperature Changes.—All metals expand and contract. If you could make the whole camera out of the same metal, that would be splendid, as all would expand and shrink together, but you can't.

The following are some of the means by which you meet these conditions. You cast the case, door and turret from the same crucible of an aluminium alloy. Where long steel shafts are used that have journal and thrust bearings at each end, the bearings must be mounted in a steel liner that has the same coefficient of expansion as the shaft. Bearing materials should have a similar expansion ratio, and the lens mount, too, should be designed that the expansion in our outer liner is corrected by the inner one's expansion. Some metals will expand ·005″ in a length of 2″ in a rise of 100 degrees, and half this amount of expansion would move the focus point of a 35 m.m. lens 6 ft. 9 ins. forward or back as the case may be.

Rain, Dust and Sand-storms.—These conditions are met by having no mechanism, slides or gearing exposed. The turret should be recessed, the motor and handle shafts fitting close through the casing, also there should be quick adjustment of tension on the cotton take-up belt, as wet affects its grip.

Lubrication.—All piling should be brought to an accessible and conspicuous position and the least number of points. Before going to the drawing board, to amalgamate the whole, you make a working model of your pull-down movement, because it is impossible to get the accuracy from a drawing.

The assembly drawing when finished should have as many views as will ensure that all parts are in correct relation and do not overlap or interfere. The general layout should conform to what is known as unit construction, as it permits unit assembly.

Detail drawings of each part, usually copied from the assembly, or from a model, if such exists, are also necessary. In these, all parts are dimensioned and the limits shown, and the material to be used added to the drawing. If on assembly a part is found to necessitate alteration, these are entered on the drawing. When the first model is finished, tested and passed, these drawings are redrawn, one only on a standard size sheet, with full details and limits.

Manufacture.—It is most important that a first model is of first-class workmanship, so that one obtains information as to its ability to do correctly that for which it was designed. When the unit is finished it should be run continuously for six or seven hours and then inspected for wear. It should be tested under the same conditions as is expected in actual production.

The first model H camera outfit was handed over to Mr. Haggett at B.I.P. in March, 1935, Mr. Stapleton agreeing to purchase it if satisfactory. Mr. Brain Langley operated it. I am pleased to have the opportunity of recording that I received a lot of help from all three, which I highly appreciate. My efforts were obviously successful, as we have sold over fifty, ten to B.I.P., and as far as I am aware that company have not purchased any other make since our first delivery.

In my efforts to effect sales in other directions, one criticism brought against the Model H was that it had no fade. I decided that, if at all possible, a fade should be added. Mr. Sadler, who has been in charge of assembling of all cameras, assisted me in the design, and we were successful in introducing a two-speed shutter fade that remains constant, irrespective of the shutter opening, mechanically operated without springs. We sell nearly as many fade-out models as the non-fade, although the cost of the former is higher.

Another criticism against the camera was, the film did not grip in the gate when the exposure took place. This cannot be substantiated, as some of the finest photography has been obtained with a Vinten camera. Other manufacturers are now paying me the compliment of adopting my method, as it helps to minimise scratches.

In conclusion, I thank you for inviting me to explain my efforts in producing a successful camera that will stand up and give a good account of itself against any other makes. I should like to see eliminated the inferiority complex that exists against British equipment. I am proud of being British and of employing British mechanics that belong to British Unions, and of helping to produce an article of which everyone connected with it has the right to be proud.

B.I.P. Sound Technicians

Confusing statements have been made recently with reference to the B.I.P. Sound Technicians who constitute the only Sound staff which is in membership of the Electrical Trades Union.

For the information of members the General Council has issued the following statement :—

On December 17th, 1935, a letter was received from 16 members of the B.I.P. Sound staff applying to join the Association and stating that "until 28/11/35, when we resigned, we were members of the E.T.U., but found they were the incorrect body to represent the Sound Dept.'s interests, and, therefore, we approach you as stated above, for inclusion in your Association."

The Association replied, on December 18th, 1935, formally acknowledging receipt of the letter and stating that the appropriate officials of the Electrical Trades Union would be approached in order to come to an amicable arrangement and expedite the transfer of membership without friction.

Mr. G. H. Elvin telephoned the E.T.U. for an appointment to discuss the matter, but was informed that Mr. George Humphreys, Secretary, London Central Committee, was away ill, but Mr. Muir, Chairman of the London Central Committee, to whom he spoke, suggested an appointment after Christmas.

Meanwhile, we understand that the 16 members concerned met an official of the E.T.U. and changed their minds. We are not officially informed of the grounds for this decision, but we feel it advisable to point out that Sound Technicians are not, and never can be, electricians. The Association of Cine-Technicians is the only trade union which caters for all studio technicians. In no studio, other than B.I.P., is the Sound Department composed of members of the Electrical Trades Union. In the majority of studios, the Sound Departments are A.C.T.

We look forward to a solution of this problem of demarcation by friendly discussions with the E.T.U., and to extending our members' friendly relations with "sparks" on the floor to the body representing them.

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The International Film Society

The International Film Society has been formed to provide opportunities for those people interested in films and film production to meet, view and discuss films from all countries.

Mr. Victor M. Gover, the Secretary, in a message to prospective members writes :—

"For a long time past a great need has been felt for a Society which can, by its meetings, keep producers of motion pictures in touch with the cinema public.

Our film magazines and the Daily Press are in constant receipt of letters from readers praising or condemning British films. Some of these communications are published, but even if they reach this stage, the result as far as effect on future production is concerned is—NIL !

It is only by collective opinions arising from discussion that constructive criticism of British films can be placed before the Producers. Further, it is necessary to see how other countries are handling their productions in order to make comparison with our own products, and the true film critic must be international in outlook."

A film session, followed by a debate on the films shown, with a well-known personage as guest, will be held each Sunday afternoon. The subscription for membership is 5/- per annum, which gives the right to purchase tickets for each film show.

Further details, and application for membership form, may be obtained from the Secretary, The International Film Society, 86 Wardour Street, W.1.

Western Electric Company, Ltd.

At Physical Society Exhibition.

At the recent Exhibition of the Physical Society, held at the Imperial Institute, Western Electric exhibited their new Sound Meter ; 2 B.E. Audiometer ; Sound Analyser ; High Speed Camera, and the new Watch Rate Recorder. The last-named instrument, which created considerable interest, is a device which is used for the measurement of the instantaneous rate of 5 ticks per second watch mechanisms. The watch ticks are picked up from the watch by means of a vibration pick-up and the corresponding electrical impulses are fed to the grid of a frequency-primed thyratron. The grid frequency controls the thyratron, whose output is used to operate an impulse stylus, which records a mark on a revolving recording drum. The recording drum is driven by a synchronous motor from a standard source of time, so that it makes one revolution for each one-fifth second or approximately one revolution for each tick impulse from the watch. The stylus is also driven along the axis of the drum and for a watch in accurate adjustment it records a horizontal line of marks. If the watch is gaining or losing, the stylus records a line of rising or falling slope, whose extent is calibrated in terms of seconds per day. The maximum accuracy of reading is to one second per day and the operation of measurement can be made in either 5 or 30 seconds, according to the accuracy required. The standard source of time driving the recording drum is a thermostatically controlled tuning-fork.

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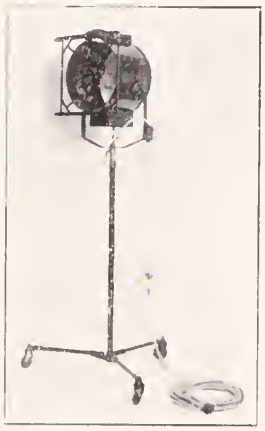

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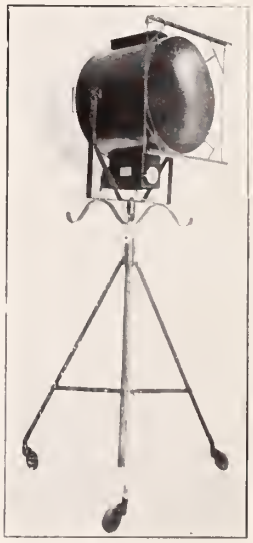

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'PHONE A.C.T. GERRARD 2366

W. PITCHER, 181 Blackfriars Road, London, S.E.1

Some Observations on the Back-Projection Process

By CHARLES E. KNOTT

One of the most successful lectures given in the A.C.T. winter course was that delivered by Mr. D. C. Dickinson on the subject "Back Projection." The writer does not intend to give a report of that lecture and the subsequent discussion, but he is grateful for the use of Mr. Dickinson's notes.

Back-Projection has been defined as "a method of making moving picture scenes by disposing behind the actors a translucent screen and projecting a moving picture thereon."

Probably the most popular use of the process is for making actors sitting on opposite benches appear to be tearing through countryside at 60 m.p.h. in a train. Two windows and a carriage door with a pair of suitably upholstered benches form the set. A screen of ground glass, paper, or some other translucent material is placed on the outside of the set, and on it is projected a scene that has actually been shot from a moving train. The resulting composite picture gives the illusion of a train journey and, with sound effects added, is doubly convincing. In this way, and for very little expenditure, a shot is taken that would otherwise be almost impossible.

It is necessary, of course, for the cameraman to light his actors and foreground to match the background scene, whose sole illumination is the projector light, bearing in mind the fact that the light on the screen need only be about half as bright as appears to be necessary when viewing the composite picture through the camera. This may sound odd, but it is explained by the fact that although the projector shutter is masking the projector light for about half the time, the camera shutter is correspondingly shut at the same time and is halving the apparent light values in the foreground. It is possible, in fact, to dispense with the projector shutter, as the consequent "travel-ghost" would not be photographed. The object to be photographed is the foreground set and the actors, and frame by frame, each still picture which makes up the apparently animated background. When it is borne in mind that there are 24 of these still pictures passing every second, the necessity of absolute synchronism between the projector and camera becomes obvious. As little as 6 deg. error between the two shutters becomes noticeable and any back-lash between the two machines will cause variation of exposure in the background, resulting in pulsations of light which spoil the illusion.

How then did the original patentee, an Italian, achieve

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synchronism of his machines in 1911, without the aid of interlocking motors, which were not then available? We do not intend to supply the answer, as we have no call on the services of a Heath-Robinson for the necessary illustrations! Further, as film stock in those days was about five times slower than that available at present, it would have been necessary to use five times as much light in the projector, as anybody has found possible to-day, without starting a fire! Probably the first use of back-projection in this country was made in 1926 by Mr. Bruce Wolfe in the British Instructional Picture, "Nelson," photographed by Mr. Jack Parker. Actually the process used was not what we call back-projection to-day. Rather it was Front-Projection, as the background scene was projected from the front and no attempt was made to definitely synchronise the camera and projector. Normal camera speed at that time was 16 frames per second and in this process the camera was run slightly slowly, while the projector was run very fast—about twice the camera speed—so that each frame of the composite picture would have had an exposure from at least one whole or possibly two frames of the background. The Maltese-cross projector movement was ideal for this use, as it shifted each picture quickly through the gate, whilst allowing it a relatively long stop.

This process was also used by the same firm on the "Battle of the Falklands," and what was probably the first train shot with moving background was that arranged by the late Billy Shenton many years ago for Welsh-Pearson. However, the difficulty and uncertainty of attaining even near synchronism caused the process to fall into disuse until the arrival of talking pictures, which introduced cameramen to interlocking motors. With the aid of these devices, it is now possible to photograph scenes in trains, aeroplanes, and ships, and in all kinds of remote and inaccessible places, without taking the actors out of the studio.

Two outstanding problems in the use of Back-Projection are uneven illumination of the screen and uneven focus due to film buckling slightly in the projector gate. Every projector screen has its hot-spot; an area where the illumination from the projector lamp is greatest, falling away towards the edges. It passes unnoticed in ordinary commercial projection, but must be eliminated in process work. The most important consideration here is the use of the right material for the screen, though there appears to be a divergence of opinion as to what that material should be. Some firms use an acetate material of greater transmission at the edges, falling away to the middle. Some use a similar screen, though not graded in this way, achieving a similar effect by using a filter on the projector light, whilst others use a screen of special paper of uniform thickness and find that a combination of this and careful adjustment of the light source keeps the screen uniformly illuminated.

The problem of uneven focus arises partly from the fact that it is necessary to pass much more light through the film than is usually the case, to get sufficient exposure of the background. This causes a slight buckle in the film as it passes through the gate, owing to the intense heat, and one firm which uses a 300 ampere sun arc as a light source has devised an ingenious cooling system. A blast of air from a compressed air cylinder plays on the projector gate while the light is on; the air in passing from its container running through pipes immersed in liquid oxygen. This sounds rather elaborate, but it has been proved to be a practical accessory and is covered by a letters patent.

One of the worst faults in Back-Projection shots is the shaking background, where the entire background scene has movement relative to the foreground. For a moving vehicle or train shot, the fact that the background is shaky does not lessen the illusion a bit. But in a stationary shot the background and foreground must appear as one solid picture. Does anything look more ridiculous than the deck-rail scene—you all must have seen one—where two lovers embrace with the mighty ocean visibly vibrating in the background, while a passing ship proceeds by a series of jerks? The shaking background must be guarded against in every phase of the process. First, it can occur in shooting the background; for if the camera used is of a type that does not accurately register the position of each frame, the picture centre will vary from frame to frame. Again, if the camera that is shooting a background is not heavily anchored, vibration is liable, and hand-turning will make a background positively dance. Traffic vibration can cause a lot of bother in this stage. An experience of the writer's demonstrated that a miniature earthquake is going on all day on the pavements of our main roads.

Having produced a shake-free background negative, the printer may be the next to introduce "shake," as ordinary contact printing is not sufficiently accurate and a special print must be made. The small amount of shake which passes unnoticed on ordinary commercial prints will be enough to spoil the illusion we are trying to create. Assuming a steady print has been made and put on a projector equipped with an ordinary Maltese-cross or similar intermittent movement, it should occasion no surprise if the background still shakes relative to the foreground. Each frame as it is projected must be held in perfect register by dowell pins or some similar accurate positioning device.

So great is the variety of uses to which the process can be put that individual problems must arise in each case. It must be noted that the only way to control the angle of objects in the background is to select the correct angle when photographing that background, as no amount of juggling with the screen and camera separately will make any difference when photographing the composite.

In conclusion, the writer hopes that these few observations may stimulate discussion of this valuable process and pave the way for more particularised articles.

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Panning Around the Globe

WHAT the eye don't listen to, the ear don't look at. Here I am . . . . Oh Public!

* * * *

America.

Faunty to be de-sissied——or so says "Variety." (Faunty stands for little Lord Fauntleroy, in case you don't know).

Cameramen in Hollywood are now the rage . . . . stars throw a temperament if they can't have their pet lenser . . . . and what now, little man, what now?

Wallpaper with Stars' faces plastered over it is now the craze. . . . . English landladies have been hanging Gladstone, etc., over the bath, etc., for the past 30 years or more.

Female censors are no longer allowed to knit while reviewing pictures . . . . so that's what they were doing.

Language cuts still being made here . . . lousy, joint, nuts, nerts, guts, gerts, skirts, etc., are all napoo. . . . . Hollywood rushing to buy "Websters" and "Manners and Rules for Good Society" by a Lady of Quality . . . or maybe go to Stolls (see last *Journal*).

* * * *

Italy.

What with wars and fires, things aren't too lively here.

Cines Studios went up in smoke and favourable winds have stopped production for a while . . . pour encourager les autres!

And Mount Etna erupts, to crown all Italian disorders . . . . what a turmoil some folk do live in.

* * * *

England.

First position in A.C.T. finishing school allotted to North London executive . . . . O tempora! O mores!

To Spike Hughes of the *Daily Herald*, greetings for this one. . . . "My friend, Barney Bryon, the he-man of the screen, denies that he is in London for anything except a holiday. . . . I'm too fond of Hollywood, he said. There's such a growing American colony there. . . . How lucky these Americans are! They don't know that an Englishman needs a visa to get a job at Elstree" . . . .

That, friends, is our position . . . so what?

* * * *

Press Cutting.

Midsummer Night's Dream. Cagney's Bottom . . . . I thought it grand . . . you must see it for yourself. . . . "Daily Express."

Advertisement, "Evening News," 2nd November, 1935.

Vedi Napoli, e poi mori!

* * * *

Answers to Correspondendents.

Anxious Mother—Yes, madam, your son does work late . . . Lady! . . . this is the picture business and things like what you mention don't ever happen.

Student—Yes, you did wrong to go home when the director said "fade out."

* * * *

Things We Want To Know.

Whether Weston-super-Mare is the name of a new film stock and is it sensitive to blue?

Who writes his scripts in the Marble Arch Corner House?

What is a . . . . internationalist?

Things We Do Know.

That the wages of sin are paid only by those who can afford to pay them.

Television is coming in March . . . but it is not stated which March.

* * * *

Whoopee.

Cinesyphon typhoon hyphen Technicians, it is now the Festive season, so take out those moths balls from your soup and fish (that is, if you are rich like me!) central heat that dickie dirt, take the bird's nest out of the old titfa . . . Whoopee! . . . its the A.C.T. Dance on Shove Tuesday. . . . . Shove's the word and Shove's the action. I'll be there with bells on.

* * * *

Etiquette.

One-does-not-wear-eveninghyphendress - at - a-general-council-meeting . . . . we-are-all-hyphendemocrats-and-not hyphendespots.

* * * *

Poet's Corner.

When father takes his spade to dig,
Then robin comes along;
He sits upon a little twig
And sings a little song.
Cut his . . . . throat he did.

* * * *

Believe It Or Not.

During a recent electricity fade-out it was conclusively proved that a certain famous figure in the industry was not self-luminous . . . . pro bono Public House!

To the "Star Man's Diary" thanks for this one:—I like the cinema which advertises an "A" film thus:—

"Don't Bet On Blondes"
(Sundays Excepted).

Congratulations to a bright Secretary on his new device of which Pog was invited to an exclusive pre-view . . . It's a method devised for practising golf at the same time as busting electric light bulbs, fusing the whole circuit, and also measuring the distance one would have driven a golf ball had one been in the open. . . . We had both run out of matches and so the length of drive is still uncertain. . . . Truly a great invention.

* * * *

Super.

This crack, my dear friends, is the best of the year. . . . I was going to write of Wardour Street through a keyhole . . . . but I can't find a keyhole clean enough. . . .

* * * *

Sensational Statement.

After endless research we are able to state definitely "Talkies are here to stay. . . ."

No expense was spared to make this astonishing discovery.

* * * *

Employment Bureau.

Mog now feels competent to enter the British film industry. Qualifications: Assiduous home-practice with her 300-coupon camera and diplomas in ten foreign languages. Starting salary of £100 per week, free of income tax.

(*Being particularly good this issue, the Editor permits me to continue on the next page*).

Recent Publications

SALUTATIONS sincere and heartiest congratulations to our esteemed contemporary, *La Cinematographie Française*, on their special number, dedicated in "Homage" to LOUIS LUMIERE, on the attainment of his seventy-first year, after forty years spent in the service of the Cinema. The event has proved an inspiration to its Editor, Mr. P. A. Harle, who, with the infallible logic and the psychological precision which is a racial characteristic, has devoted the whole 88 pages to an aperçu of two-score years of events in the progress and development of the movies.

To the die-hards in the kinematograph ranks of twenty years ago, a good many of the articles come as a reminder that it was to French studios most of the cinemas of that day were indebted for their star pictures, such as Gaumont and Pathé sent us. "Le Voyage dans la Lune," the Max Linder pictures, "The Triumph of Death," "L'Aiglon," "L'Homme aux Trois Masques," "Madame Sans-Gene," "William Tell," "Les Miserables," and a host of others, some of which came out in the open market days, not forgetting the varied programme features handled by the old Warwick Trading Company.

Auguste Lumière, the brother of Louis, tells us, in a wistfully written document, "Souvenirs," how he assisted his brother at the birth of kinematography, and latterly for family reasons turned his attention to the biological and medical researches in which he has attained such great distinction. A. P. Richard outlines the genesis of kinematography in a generously illustrated account, with diagrams of the ancient "gadgets" which probably our own historian, Will Day, might easily challenge. The Editor's own forty years' history of French kinematography reveals what may now be regarded as comic photographs of what stood for Studio progress in those halycon days, when scenery worked overtime, and natural scenes were anathema. Debrie fans will be interested in the story of the evolution of the famous camera and the indomitable spirits that refused to be outpaced in thirty-five years' competition with the world's most alert camera-constructors. Revellers in reminiscences will cherish the lavish display of photographs of old-time scenes in internationally famous masterpieces.

But there is one item in this "Homage" Number that should make British picture-goers envious. It is the official account of the honour done to Louis Lumière at The Sorbonne on 6th November last, when, headed by The President of the Republic, members of the French Cabinet, Ambassadors from every nation, the Members of the Institute and various famous scientists, assembled to pay tribute to the French inventor of kinematography. In fact, the French Government shewed themselves conscious of their debt to the films. Why should not the British Government equally honour those pioneers who have paved the way for the enlightenment, by the screen way, of a twenty million public? Buckingham Palace Parties have been given for events of lesser significance.

ROBB LAWSON.

"FILM ACTING," by Pudovkin. Newnes. 7/6.

We regret that a review of this book has been unavoidably held over until the next issue.

Panning Around the Globe (*continued from preceding page*).

Prizes.

We award three prizes this issue :—

(1) A lighting contract with "Not To-Day Josephine Productions" to the student at a cinematography school who wants to enter the film industry and assures us that he can cut, record and light a picture, but is not quite so sure as to the correct use of clappers.

(2) One brass figure to the solver of the equation : One Viola = Six Saxaphones.

(3) One gazunda to wisecracker, Pat Gay, at A.C.T. lectures for "the camera hanging together by excitement" and "a drop of Mother's blue-bag in the water" of a colour epic.

* * * *

Tailpiece.

Seeing as the *Journal* is out too late to wish you a Happy New Year . . . I'll wish you all a soldier's farewell. . . . How are the folks. . . . .

Your Servant,

POG.

Index for Volume One

VOLUME ONE is completed with publication of this number. An Index will be available by about the middle of February. A copy may be obtained upon application to the *Journal* Offices, or will be included in volumes bound by the printers of the *Journal*, details of which are advertised elsewhere.

The Journal of the Association of Cine-Technicians

SUGGESTIONS AND CONTRIBUTIONS welcomed from all Cine-Technicians.

VOLUME TWO, NUMBER FIVE, will be published 1st May, 1936.

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volume two

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Kinematography and its "Explorers"

By ROBB LAWSON

SURPRISING what a Celebration can do! When I was asked to "assist" at the organisation of The Lumière Celebration, I had no idea that, Columbus-like, I was entering into an entirely new and evidently unexplored land. My task was outlined simply as, participator in the job of paying honour to Louis Lumière, "the inventor, whose work in Kinematography provided the first show of Moving Pictures *to the paying public* 40 years ago, at The Polytechnic, on 20th February, 1896."

That seemed simple and straightforward enough. But I had not the slightest notion that the mere announcement of the event would raise a cloud of claimants, who demanded that justice should be done to people with prior claims, and to whom the credit of inventing Kinematography, they argued, was probably due.

Heaven forbid that I should seem to attempt in any way to settle these discussions finally! That is the job historians are made for—to hold the ring for rival candidates and referee the contestants. All I want to say, at this juncture, is that if you are a plain-minded man, willing to accept the facts, you will find your pathway mighty puzzling. That is why I admire so greatly the yeoman service our film historian, Mr. Wilfred E. L. Day, has done, in refusing to accept any claims that are not backed up by documentary or physical evidence and dates. And it is to him I have been indebted for information that does at least establish the Louis Lumière claim to be the first man to show Moving Pictures to the *paying* public.

THE ZOETROPE, which inspired invention of Kinematography, originally invented by W. G. HORNER of BRISTOL. It was a shallow cylinder mounted on stand, revolving horizontally, with slits round top. Drawings were sketched on inside cylinder—on a 30-inch strip. 1834 A.D.

—*By courtesy of* WILL DAY.

Contestants for Inventor Title.

It occurs to me that in order to save further claimants trouble, I should deal with three of the main contestants for the title, and retail the facts I have so far gleaned.

A good many newspapers chided us for the fact that in inaugurating the Lumière celebrations, we were deliberately ignoring the claims of W. Friese-Greene, despite our having taken pains in all publicity issued, to point out that W. Friese-Greene was the first man in the world to secure a patent for Kinematography. His first specification was lodged at the Patent Office on June 21st, 1889, and his completed specification on March 13th, 1890. The patent granted was numbered 10131. It described how he had been able "to secure upon a band of celluloid film a perfect sequence of photographic images, taken in rapid succession by a single camera, fitted with one lens, and taken from one point of view." When the big American contest for the patent rights of Kinematography came up at the United States Supreme Court, with Edison as the plaintiff, Friese-Greene went over to America as a witness to establish his prior claim, and the verdict was given to him. Mr. Wilfred Day will, I am sure, be pleased to show anyone interested the American official report of the case.

The Friese-Greene Claim.

There exist records of Friese-Greene having given private shows of his invention all over England. What, so far, has not been discovered is any evidence of his having shown these moving pictures to the *paying* public. I have been told his ambitions were laid on a more ample scale. It was his plan to float a company which would manufacture projectors that could be hired out by "showmen" of all sorts, from the hire of which he would derive an

annual rental and on a royalty basis, much in the same fashion as the sound equipment firms latterly adopted for the hire of their apparatus. A good many thousands of pounds of shares in the enterprise were bought by private investors, but for a variety of reasons the enterprise failed, as the Americans say, "to jell." The sequel came when the whole Friese-Greene laboratory outfit and apparatus were sold by auction for thirty shillings!

About Augustin Le Prince.

With regard to the claim made by Augustin Le Prince, the legal evidence is not quite so definite. As early as 1886, Le Prince had succeeded in producing a camera which took a series of consecutive photographs in rapid sequence, and also a projector to show them. In one of his cameras there were 16 shutters and lenses, so that his invention was less effective than that of Friese-Greene, which needed only one lens. But Le Prince had got the length of using perforations on sensitised gelatine bands and using toothed sprockets to give the necessary movement. There is no doubt that Le Prince was well on the way towards the invention of Kinematography and had created some original processes, but Fate intervened. On September 26, 1890, he went on a visit to his brother at Dijon, prior to an American trip, boarded the train for Paris and seemed to disappear entirely. At any rate, both English and Continental detectives failed to trace him.

MR. WILL DAY showing and presents the PHENAKISTOSCOPE invented by Dr. PLATEAU of GHENT (1830 A.D.). Two discs on a shaft—the front disc had slots round the margin. You revolved the inside disc and got the illusion of motion. There were 14 drawings in sequence.
—*By courtesy of* WILL DAY.

Pioneers All.

Much has been made of the claim that Birt Acres was the first man in England to show pictures to the paying public. I have written elsewhere concerning this, but in the absence of documentary evidence, I am afraid that claim must be left in abeyance. That Acres took a moving picture of the Oxford and Cambridge Boat Race in 1895 seems confirmed by the fact that he gave an exhibition of animated photographs before the Royal Photographic Society on January 14, 1896, in which this was included. It was a *private* show, which leaves The Polytechnic claim for Lumière priority undisturbed. I am told the Oxford and Cambridge Boat Race film had been used in the Kinetoscope peep-show machines. But evidently Acres was one of the pioneers who had been working simultaneously on the same problem as a dozen others.

In America and in Europe, Marey, Edison, Evans, Demeny, Donisthorpe, Jenkins, Anschuetz and a host of others were all working out this puzzle of trying to photograph pictures in rapid succession. Very few troubled themselves about the problem of projection. The first public exhibition of moving pictures, *projected on a screen*, was given by C. Francis Jenkins on June 6th, 1894. Jenkins was a stenographer in the Treasury Department of the American Government and spent his spare time experimenting. It was not till August, 1895, that Jenkins put his machine to public use. This was at Cotton States Exposition in Atlanta, Georgia, and the charge was 25 cents. But the public did not seem to be interested, so the "barker," in order to get a crowd, "announced" a free admission, and "if you like it well enough, slip a coin in the box as you go out."

Edison Afraid "Novelty" Would Die.

Curiously enough Edison had never been interested in the Projector idea. His Kinetoscope, a peep-show affair where you placed a coin in the slot (all the rage in Victorian days) was not presented to the public until 14th April, 1894, when it appeared at the Kinetoscope Parlour on 1155 Broadway, New York. His objection to Public Projection on a screen was that it would bring such crowds that the novelty would soon be exhausted! Fortunately for the film industry, he was in a distinct minority.

In France, Louis Lumière, working with his brother, August, had discovered how to put photographs on celluloid. In 1892, Louis was puzzling out, separately and unknown to any of the other European pioneers, a method whereby he could take moving photos on celluloid, and after two years he had devised a camera that enabled him to take a moving picture about 17 metres long (about 50 feet) showing the workmen leaving his father's factory. What was left to do now was to find a method of showing the moving photograph on a screen. A visit to Paris—a peep at the latest Arcade novelty—the Edison Kinetoscope—gave him the cue. The Lumière Cinematographe was the result—his first Camera, Printer and Projector was patented on 13th February, 1895, and on March 22nd he gave his first demonstration at Lyons, which included that picture of his father's factory, consisting of 900 pictures which passed through the projector at the rate of 16 pictures a second.

The Lumières Cautious Showmen.

Père Lumière, brother August and Louis, by this time realised that here was a profitable side-line. They were manufacturers of photographic materials and accessories, ran an extensive factory, but this "Cinematographe"

Cuttings from original Lumière Films made in 1895.
(*a*) Train leaving Asnieres Station.
(*b*) Under the hat (Trewey in "Chapeaugrapy" Act).
(*c*) Breakfast on the lawn. With August Lumière and family.
—*By courtesy of* WILL DAY.

Cutting from original Lumière Film photo in 1895. "A quiet game of Ecarte."
—*By courtesy of* WILL DAY.

business, there might be money in it! You never knew! So they hired a cellar beneath the Grand Café in the Boulevard des Capucines, Paris, at the rate of 35 francs a day. They lost exactly three francs on the first day's hire. It seemed a bit risky, but they persevered. The nightly attendance increased—they charged 1 franc and 1.50 francs for front seats. Within fifteen days they began to feel a little more confident and, fortified with their success, began to talk about hiring out patents and concessions.

Not that the projection business was too easy then. The screen had a habit of creasing—they found it was necessary to keep on wetting the sheet which hung from the ceiling, in order to make it reflect the pictures. When the sheet got dry, the light passed through. They made a little bargain with the local Fire Brigade to keep that sheet in a state of moisture! The rest is history.

Father of All Cinemas stages the Celebration.

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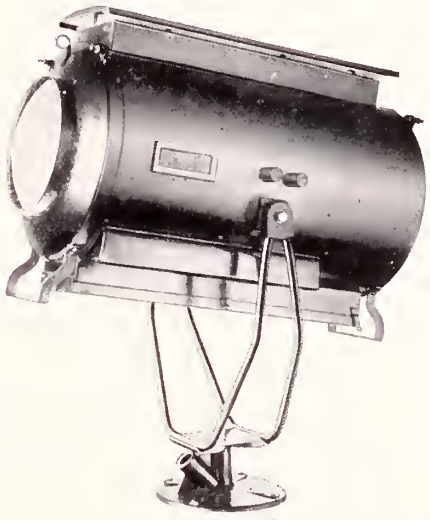

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LUMIERE'S PROJECTOR, with operator, used at the POLYTECHNIC, Regent Street, London, 20th February, 1896.
—*By courtesy of* WILL DAY.

known as J. E. K. Studd, to be the first Londoner to grab this novelty and introduce Le Cinematographe to the British public on 20th February, 1896. It fell to him again to celebrate the 40th Anniversary by inviting his old friend, Louis Lumière, to come over and receive the tribute accorded to him in "the Father of All Cinemas," at The Polytechnic on 20th February, 1936. Among those present to greet him were seven Ambassadors, two Cabinet Ministers, the leading members of the French Colony, a dozen of the heads of Government Departments and representatives of thirty Societies and Associations, six famous film producers and six famous directors. The cinema veterans, too, turned up in full strength. Three hours later the British Film Industry feted M. Lumière at a Complimentary Luncheon arranged by the B.K.S., and I can vouch for the fact that Louis Lumière was deeply touched by the whole pageantry of events that had been arranged in his honour. Modestly enough he told me he had done so little to deserve it ! By which remark he did himself less than justice. After all, there should be some reason for natural pride in remembering the fact that "Le Cinematographe" proved such an immense world-wide success that every ancillary business concern tried to imitate the patent and 1200 concerns "went broke" in five years in the attempt to copy it.

Selling Fifty-Feet Features.

The one fact that remained unchecked in the Celebration was to discover the Londoner who sold the first Lumière films. At last I found him.

Mr. G. D. Adams, in 1896, the same year as Lumière gave his show at The Polytechnic, was an outdoor representative for Fuerst Bros., Pilpot Lane, who were Agents for Lumière's photographic materials. Lumière Bros. then ran quite a famous French factory for chemicals, etc. When they launched out into this side line of animated photographs, they suggested to Fuerst Bros. that their salesmen might add this as a side-line. But let Mr. Adams tell his own story.

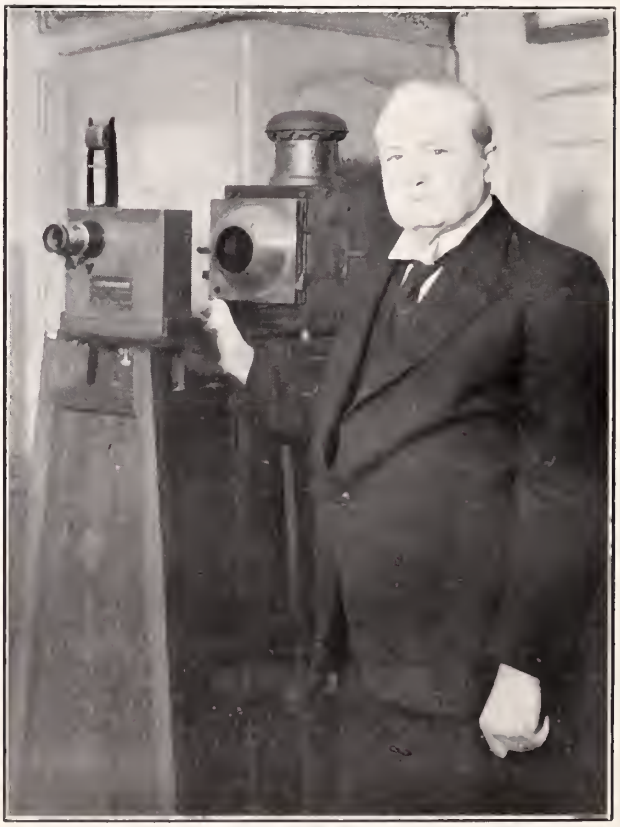
"I was in attendance upon M. Trewey when Lumière pictures were shown at The Polytechnic on February 20th, 1896. My firm provided many of the films shown there. They were sold outright at an average price of 1/- per foot. These animated photographs averaged about 50 feet long, and it was part of my job to sell them throughout England and Scotland. The subjects included :—

Bathing in the Mediterranean.
The Arrival of a Train at a Country Station.
M. Trewey in his Act—"Under the Hat."
The Fall of a Wall.
Babies Playing.
A Quick Game of Ecarte.
And sixteen other titles.

Who bought them ? All sorts—I sold a good many to proprietors of shows on various fairgrounds, but latterly, when projection machines could be secured, a good many of the "showman" type of business men hired halls and ran them as a profit-making side-line. One of these—he owned a china shop—was positively brilliant in devising titles for his pictures. I had a very dull subject to offer him—it showed a group of navvies shovelling soil into a rail-truck. This sight bored my friend—then he got a bright idea. He described it from the stage as "Gold miners shovelling nuggets for despatch to London."

Adams Does First Topical for Earl's Court.

Mr. Adams had the honour of taking the first "Topical" for Imre Kiralfy, depicting the opening of Earl's Court, which was shown at the Cinema there, and which, curiously enough, Ronald Colman remembers as being the first moving picture he ever saw. His uncle had taken him



MR. WILFRED E. L. DAY with the original LUMIERE PROJECTOR which he demonstrated to the audience at The Lumière Celebrations at THE POLYTECHNIC, 20th February, 1936.

along for a treat. One of the supers of that date, a copy of which Mr. Adams sold to G. Albert Smith of Brighton, was Urban's production of Van Biene in "The Broken Melody," seventy-five feet long.

"We had no synopsis, or descriptions, to show to customers. Lumière cut up five-inch strips of the Picture, such as 'A Bullfight in Spain,' fixed it on a slotted card, and the customer could see through the transparent celluloid."

Polytechnic School Head Early Cameraman.

It was only in tune with the fitness of the occasion that the man who conducted operations in connection with the Lumière Celebrations should himself be a moving picture cameraman. Mr. L. J. Hibbert, the Principal of the Polytechnic School of Kinematography, was at one time cameraman for the Clarendon Film Company, which twenty years ago was among the "aces" of British production companies. The resourcefulness and ready wit that are the attributes of an expert news-reel man had then to be allied to a nose for "pictorials." Mr. Hibbert has a rich vein of stories to tell in this connection.

"We were then turning out a serial entitled, 'The Adventures of Lieutenant Rose, R.N.,' good fighting stuff, with lots of feats of 'derring-do.' Each picture ran from 800 to 1000 feet and cost would sometimes go into such dizzy figures as £1200. We sold copies at sixpence a foot, of which we could sell up to 400 copies. Germany was our biggest Continental buyer, taking as many as 80 copies. A sequence in this serial was needed showing the Fleet steaming out from Portland. I reported to the King's Harbourmaster who gave me permission to put up my camera on the breakwater. But the location I wanted for taking the shot happened to be a small turret which was controlled by the War Office. I was told that I must get their permission. Off I went, but the officer concerned positively refused to talk to me. Cameramen were not then very popular with the official classes. By scouting around the shore taverns, I managed to find out that the fleet would leave at 6 a.m. It didn't take me very long to find out who owned the fastest motor boat—I was out on that breakwater by 5 a.m. next morning. Arrived near the turret, I scrambled up with my gear and got going—some ideal shots as the Fleet steamed out. Suddenly I heard a rifle shot. The motorman shouted, 'There's a boatful of soldiers after us.' I scrambled down, dumped the gear into the boat, and told the man to hustle. In the distance I could hear the soldiers in the other boat yelling at us, 'Stop.' On we went faster and faster. A couple of bullets whizzed over our heads. At last we reached the shore. I gathered up my belongings, rushed for a car, and made for the London train, with the precious 'shots' intact. Just as the train was moving out, a corporal's guard came running up. I didn't feel safe then. That meant they would catch me up at London and I could be searched. I decided to jump out at Clapham and having there bundled my traps into a cab, made straight for the studio, to deliver the negative. Next morning the military had traced me to the studio. My chief accompanied them to the Admiralty and explained matters, with the result that my pictures of the Fleet were released, the Admiralty regarding them as good recruiting propaganda.

"When required, a cameraman had to do a bit of production as well. For one episode in a picture, they wanted a real rousing battle between the sailors on a warship and

(*Continued on page* 7)

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Adrian Brunel

on The Danger of Quickies to British Technicians

It is possible to make quite a good pound-a-foot film in twelve days, but the chances of your doing so are remote. Even the best fifteen-day quickie will show evidence of haste and cheapness somewhere. For instance, amongst an otherwise competent cast there may be one artist who is just passable in most of his scenes, but who is definitely bad in one or two of them; being a cheap production, a better artist could not have been employed, neither was there time to remedy the situation with extra rehearsals, extra takes, extra closeups, changes of angle and the score of devices that exist for correcting such a state of affairs. Or, perhaps, a sequence dragged, because the editor had to deliver his cutting-copy to the laboratories before he could get the last ounce out of the material to hand, or because the director was unable to provide the close-ups necessary for achieving speed in cutting, or because the director was afraid to risk confusing artists by trimming dialogue on the floor when he had to finish shooting before eight o'clock, or because the producer was afraid he might not have enough footage—and "footage" is what most quickies are to many people in Wardour Street.

Photograph] [Christopher Brunel

Such things happen in even the best quickies and it is always the British technician who is blamed. His quickie work is compared with that of his opposite number in the most expensive Hollywood productions, with the result that when a unit is being formed to make a more expensive type of production, foreign technicians are unfairly and unnecessarily imported. The importation occasionally of a foreigner who is an ace technician is good for the industry—if he is an ace and not a charlatan. Actually, I think it is wonderful what most British technicians and artists do achieve in these circumstances. In many departments the technical work, without being distinguished or outstanding, is of quite a high level, the camera work, art direction and recording in particular. It is mainly in the script, direction, acting and cutting that the time factor operates against the best work.

Good films are made with time and money and imagination. No amount of imagination will save you if you haven't the time and the money. A usual line in the reviews of quickies is—"the treatment and direction show lack of imagination . . ." It would be fairer to say that the promoters of this type of picture show a lack of imagination. Without money you cannot buy imagination, without time imagination cannot flourish; imagination and inspiration do not come from a tap to an ever-full cistern. But good films are not automatically achieved by frittering away time and money.

I have made a fair number of quickies and have learned a great deal in the process. One is that the odds are usually so heavily against you that a good film is more a matter of luck than of design.

Let me amplify this statement. The reading and selection of stories takes time and costs money; all stories for quickies or cheap quota films should have few and inexpensive sets and not too many characters. Many a simple story will fall naturally into 30 sets, but even a dozen sets is too many for a cheap film, as not only is the cost of building and furnishing this number of sets too great, but the time in changing over from one to the other in the studio is too costly. Then there is the purchase price of the story; if and when you do find a good and suitable story, the chances are that the author's idea of price is far beyond the limit set in your budget.

Next, the treatment, dialogue and script must be written. For the price you are prepared to pay for this work you can only hire a cheap script-writer, and if you are lucky enough to get someone with imagination, you will have to control him the whole time, for imagination cannot be given a free hand — any idea contributed *must not* involve additional expense in extra sets, characters, locations, props and so on. Again, having limited the scenarist in this way, he will naturally limit himself in the time he can afford to allow your work, even if you do not hurry him yourself. Finally, when the shooting script itself is written it *must not* be split up into the number of scenes such a story should have to be presented properly—we have not the time on the floor or the negative to spare for technical embellishments.

So much for the story, the basis upon which the whole film is built. Consider the circumstances outlined and compare them with the way a story is tackled on a big production where a staff of readers is employed, where there is comparatively no limit as to the price of the story and the number of sets required to do it justice, and where a host of treatment writers, dialogue writers, technical advisers, gagmen and secretaries are hired in to make the epic. Then, with oceans of time for preparation, the

unit marches on to the set—without a complete script! The most the quickie director can hope for is an unsuccessful play produced in the reign of King Edward VII. and little time or help to prepare it for the floor. It is not every day a *Badger's Green* falls from Heaven into his hands.

Let us now consider the cast of a quickie. Casting involves time and money, and you haven't either. You must have experienced artists who are quick at learning their lines and they must be cheap! You cannot afford to experiment with "discoveries," and you cannot afford to take tests of more than one or two of your artists. I am often being asked, "Why in heaven's name did you employ that girl?" The answer always is, "Because every other girl I wanted was too expensive or engaged on another film." Sometimes you are lucky and get seventy-five per cent. of your cast that are reliable and competent, but what chance have *they*, and what chance have *you*, with the remaining twenty-five per cent. of possibly hopeless duds?

Now, take the director of a quickie. He is almost invariably an Englishman—we never insult foreigners with the task of making films without adequate material or remuneration. His first consideration is to finish to schedule and within his budget. He must not consider his reputation. He must subdue his ambition and professional vanity; he must pass what he knows to be bad work and must do his best in the time; he must be ever patient and helpful and suggestive, with one eye on the clock and the other on the register of his negative expenditure.

I could say a great deal more regarding the director of quickies, but will content myself now with pointing out that his function is entirely different from that of the director of popular imagination, who is part-producer and a free craftsman and artist.

Finally, the editor. There are Englishmen whose ability as editors is equal to any of foreign nationality, but the greatest genius in the world could not achieve much with a quickie, because his material is limited and his time is limited. I know some brilliant fellows who achieve miracles, but not perfection, for perfect editing requires considerable time and infinite patience—and time they are never allowed. Further, he must deliver a film that is 6000 feet in length, however slow it may be, and even if the cutting out of 500 feet might result in a good film instead of a bad film. As a result, the editor's work is usually criticised, and a quickie editor has to remain a quickie editor, while big productions hire foreign craftsmen at fabulous fees.

(*Continued on page* 8)

Kinematography and its "Explorers" (*contd. from page* 5).

men on a pirate-ship. I decided that Harwich might be a likely spot to get 'the goods.' It would take too long to explain, how I managed to get it staged with the assistance of the commander of a destroyer, who kindly allowed 'the lads' in his boat to stage a mimic scrap with the burly crew of a tramp steamer that happened to be in the harbour. But that heartening battle between the two crafts and their crews turned out to be one of the most thrilling episodes of that serial."

(*We are indebted to Mr. Will Day, the film historian, for loan of blocks used in this article and help generally*).

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FILM . . . PRODUCTION

By Adrian Brunel

With an Introduction by Alexander Korda

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"At a time when Mr. Brunel was making a series of satirical films, he was described as the 'Leacock of the Screen.' Although he has apparently abandoned that rôle, the description seems prophetic; Stephen Leacock is a Professor of McGill University and Adrian Brunel is rapidly qualifying for a Chair of Cinematography."

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NEWNES

The Royal Photographic Society

By D. A. SPENCER (President of the R.P.S.)

There are still a number of technicians in the Cinematograph industry who are unaware of the connection of the Royal Photographic Society with cinematography, although to many the Exhibition of Cinematography organised by the Society's Cinematograph Group annually in November has proved an introduction which has led, through membership, to a closer association with the society.

The wonderful development of cinematography, especially since the introduction of sound, has served to emphasise every aspect, from production to projection, except that upon which it is founded—Photography—which has tended to become obscured by the many problems which have thrust themselves upon the studios with this development, problems in the main associated with engineering. Nevertheless, all that is involved in the production of a film has little meaning unless the final result is good photography and a good sound record on the reel. Every activity in the production is conditioned by this fact.

It is impossible for me to summarise, even, the association of the R.P.S. with cinematography since its earliest days, and all that I wish to do here, in response to the invitation which your secretary has so kindly extended to my Society, is to refer to our interest in professional cinematography and the privileges of membership.

The Society's Cinematograph Group arranges its meetings—held on the fourth Friday in each month from October to April—to cover both amateur and professional interests, the first half of the meeting being devoted to subjects of interest to the amateurs and the second part to subjects of professional interest. The meetings commence at 7 p.m., and the professional part of the programme usually begins at about 7.45 p.m. Subjects dealt with during the present session include optical printing, multiple plane animation, sound photography, the news reel and film editing. Films are also occasionally shown at the ordinary meetings of the Society; these are held on Tuesday evenings from October to May.

Membership of the Society affords an opportunity for amateurs and professionals, photographers and cinematographers, producers, cameramen, technicians, to meet on equal terms, and the Society affords a platform for the discussion of their problems.

Then there is the library, believed to be the most complete of its kind anywhere, which is available for use by the members. It is open daily and can also be consulted by members in the evening. Dark rooms and a work room are provided for the use of members and a studio is also available, for daylight or artificial light. The artificial lighting equipment is mercury vapour and half-watt. The dark rooms, work room and studio are open for the use of members daily from 10 a.m. to 10 p.m. The Society's house is closed on Sundays.

In recent years the Society has organised annually an important Exhibition of Cinematography, comprising stills and apparatus. A series of meetings, at which papers on various aspects of cinematography are read and films projected, are a feature of this exhibition. A competition for amateur cinematographers is arranged in connection with this exhibition. The exhibition is held towards the end of the year, usually in November.

The Society's Annual Exhibition, held in September and October, is, of course, one of its most important activities and is universally recognised as the world's premier photographic exhibition. With the series of House Exhibitions, staged monthly, opportunities are thus provided of appreciating the progress made in the various branches of photography.

There is a further aspect of the Society's activities to which I would like to direct attention—the Associateship and Fellowship. These are important qualifications and only members who are able to satisfy the Council of their ability "in one or more branches of photography," are admitted to them. Cinematography is naturally one of the branches in which application may be made and a special Cinematography Advisory Committee for this branch is appointed annually by the Council to examine and report upon applications. Associates have the right to append the letters A.R.P.S., and Fellows, F.R.P.S., after their names. The Secretary, Mr. H. H. Blacklock, is always glad to give members full information and advice, when this is desired, concerning these qualifications.

The annual subscription to the Society is two guineas and the entrance fee one guinea, but the latter is waived to to members of affiliated societies and as The Association of Cine-Technicians will shortly become an affiliated society, it will not be payable by any of its members who join the R.P.S. Furthermore, 25% of the first year's subscription of members of affiliated societies who join the R.P.S. is returned to their societies, so that members of the A.C.T., who join the R.P.S., will have the satisfaction of knowing that they are contributing to the well-being of their association in supporting the R.P.S.

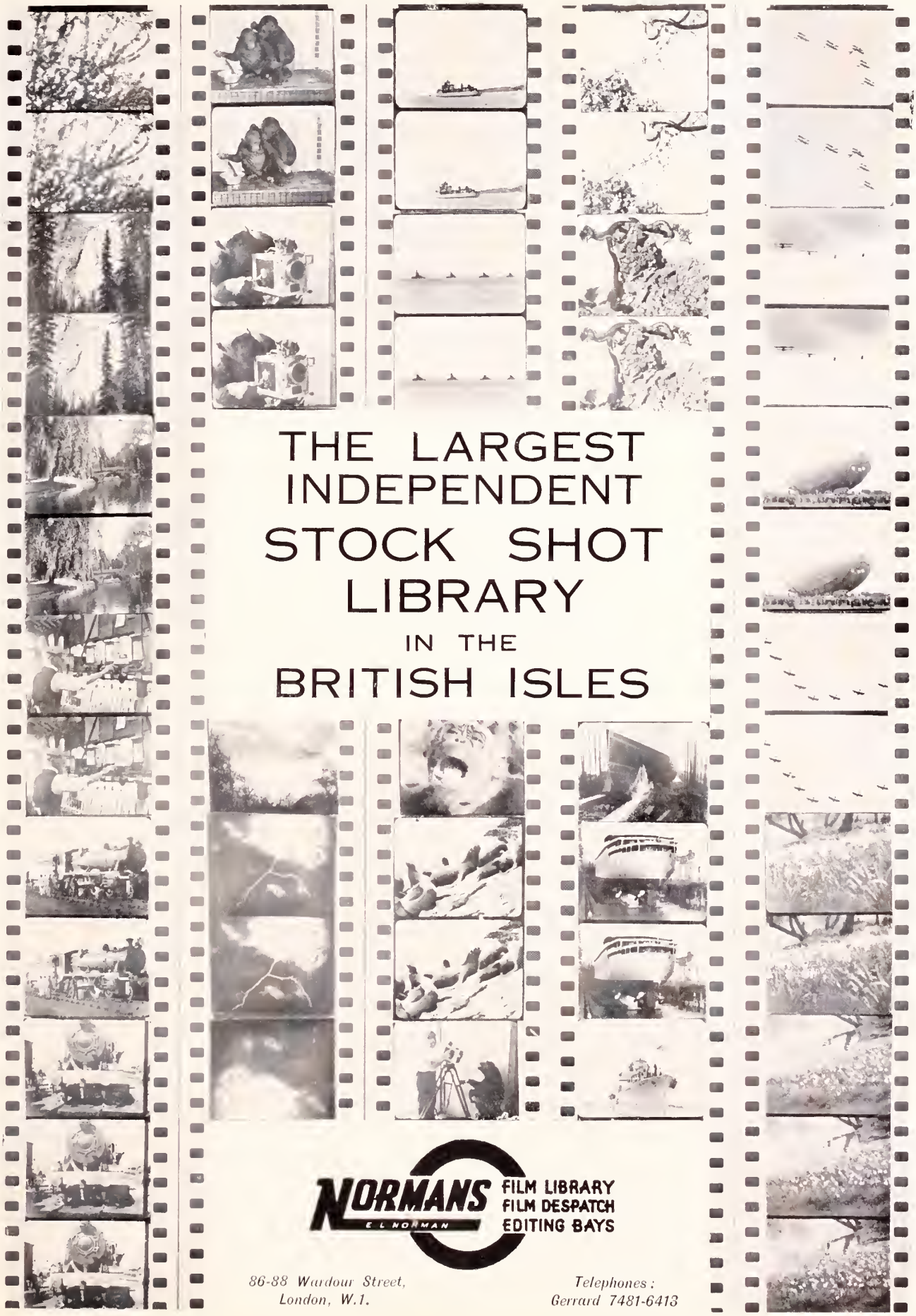
I will conclude by expressing the hope for a still closer association between the members of the A.C.T. and the R.P.S., and extend a cordial invitation to all who are interested to join the R.P.S., assuring them that their applications will be received with the utmost appreciation by the Council.

Adrian Brunel (*continued from page* 7).

Considering this resumé of the situation, I think I am justified in claiming that a good quickie or cheap quota film is too often more the result of luck than design.

What is the remedy? There are many, but mainly it is a matter of time and money. The pound-a-foot type of production must be abolished by law or agreement for anything over three reels—a short quickie of three to four reels costing a pound-a-foot is usually much more acceptable than a six-reeler made at a *pro-rata* cost, because it is shorter and is not challenging comparison with the feature film.

The solution is not a money-quota of foreign product, because one production costing £60,000 in place of ten costing £6,000 each would only result in the closing down of half our studios. In any revision of the Films Act there must be a clause fixing the minimum cost of production. This might be £12,000. If this could be achieved, most of the practically insuperable difficulties connected with the making of the pound-a-foot type of picture would be remedied; the resulting films would make money and not damage the prestige of British productions, artists and technicians.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Polarised Light and the Kodak "Pola-Screen"

IAN DENIS WRATTEN

(Motion Picture Film Dept., Kodak Limited, London)

THE term "polarise" does not refer to colour or brightness, but to a third property invisible to the unaided eye, which is concerned with the way a light ray vibrates. Ordinary light rays vibrate through space in the form of waves, but unlike sound waves (where the vibrations are along the direction of the wave) the vibration of a light wave is at right angles to the ray and generally in all possible directions. (Fig. 1).

Now it is possible by using a polarising device to change the light ray so that it vibrates only in one direction (Fig. 2). This one vibration is not only composed of the one originally vibrating in this same direction, but is also composed of parts of all the others, except the one vibrating at right angles to it. The result is that almost half the light is allowed through, even though there is only one direction of vibration. A light ray in which only one direction of vibration exists is called "plane polarised."

Although the Nicol prism has been used as a polarising device by scientific workers for many years, it is unsuitable for ordinary cinematography, because its length is very much greater than its free aperture. The introduction of a highly efficient polarising device in sheet form, the Kodak Pola-Screen, will enable the motion picture cameraman to investigate the possibilities of polarised light. The Pola-Screen incorporates between glass plates a material in which are countless minute rod-like crystals, which are all parallel to one another.

It should be mentioned at this point that the vibration plane of the Pola-Screen is in line with the handle (Fig. 3), and that a ray of light already polarised will pass through the Pola-Screen if the vibration of the ray is in line with the screen's vibration plane. The desired effect is, therefore,

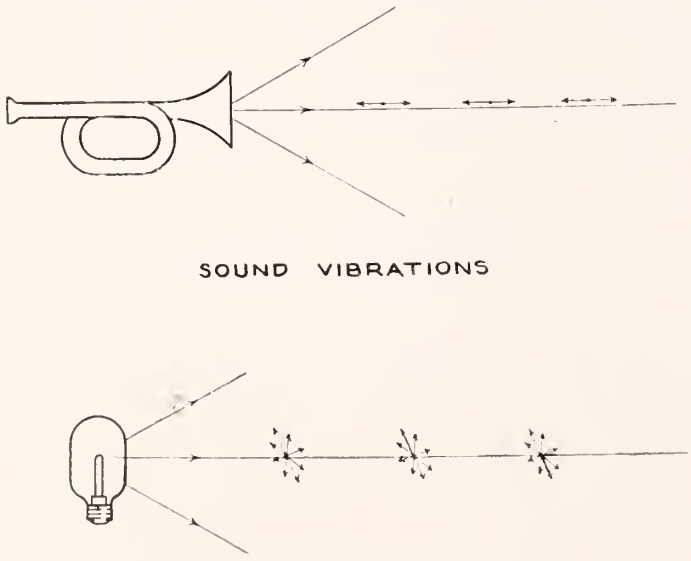

Fig. 1.

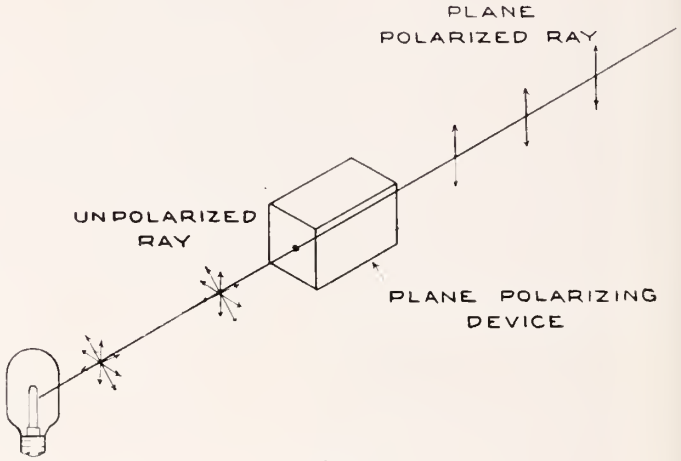

Fig. 2.

obtained by viewing the subject through a Pola-Screen and rotating the screen (through an angle of 90°) until the correct position is found.

Plane polarised light, or light that is partially plane polarised, is very common in nature, so that the cameraman who is equipped with a Pola-Screen on the lens of his camera will find that he has considerable control over contrasts in his subjects, even though he is unable to change the lighting of his subjects. There are two sources of polarised light in nature—clear blue skylight, arriving at right angles to the sun's rays is strongly polarised, and light reflected at about 30° from non-metallic surfaces is polarised by the action of reflection.

For a clear blue sky, the Pola-Screen acts as a variable depth filter. Any sky effect, from no filter to red filter, may be obtained by rotating the screen to the desired position. An important advantage over the use of colour filters for this type of work is that the use of a Pola-Screen will produce the dark sky effect without giving colour distortion of any objects in the foreground. In this connection the Pola-Screen offers the only known method of obtaining dark sky effects in colour photography. The most effective position is when the sun's rays are at an angle of 90° to the direction in which the camera is pointed. The Pola-Screen has no effect when shooting directly at the sun, or directly away from it.

When the camera lens axis is at about 30° to the surface, reflections can be removed from glass or water by rotating the Pola-Screen to the required position. Other camera angles are less effective and at 90° no control is obtained.

For architectural work a Pola-Screen over the camera lens makes possible considerable control of the relative brightnesses of the walls and roof of a building.

It two Pola-Screens are placed together, so that their vibration planes (in line with the handle) are at an angle of 90°, practically no light is allowed through, but when the vibration planes of the two screens are parallel, all the light

from the first polariser goes through. Thus two Pola-Screens together form a useful variable neutral density, varied by rotating one relative to the other. The range of density available is from 0·5 to 2·8 (transmission 32% to 0·16%). In the same way, two Pola-Screens together offer an intensity control in printing which does not appreciably affect the colour of light, nor cut down the diameter of the printing beam.

Technical Details.

Kodak Pola-Screens have a spectral range of polarising power from 400 to 700 milli microns. They absorb in the ultra-violet and transmit freely, without polarisation, in the infra red. The exposure factor is four at all angular positions of the screen. A lens hood must be used with the Pola-Screen, since the latter has a slight light scattering power, and the screen should be mounted so that it can be rotated slightly more than 90°.

Fig. 3.

Co-operation Between Studio Technicians and Projectionists

At the A.C.T. lecture on Monday, 17th February, Mr. G. E. Lansdown, one of the Joint General Treasurers of the Guild of British Kinema Projectionists and Technicians Ltd., spoke to the members on the advantages of technical co-operation.

Everyone, he said, realised that studio technicians were indispensable. Without them the picture would have no being, and the Guild fully appreciated the trials and tribulations of the studio men.

The projectionist is the link between the studio and the public. In a sense he is the "salesman" of the film the technician makes.

For example, a hint from a projectionist has caused alterations of change-over points, which have saved action and dialogue from being spoilt.

The speaker recalled how, a few years ago, his theatre had booked a series of films, and the prints delivered were very indifferently tinted. A suggestion to the renter ultimately brought a visit from the renter's printer, who ultimately turned out a sepia-toned and amber-tinted print which improved the picture immeasurably.

Conversely, he told of a film, upon which much time and money had been spent, being trade-shown at a theatre not regularly used for picture production and shown by casual operators. That trade-show was a "flop" and nearly ruined the picture. After judicious cutting, that same film was reshown at a regular picture theatre by competent projectionists and was very extensively booked.

In conclusion, he invited the views of others present and suggested that at a later date they might like to hear the ideas of other Guildsmen on such subjects as sound-print density and change-over cues.

Mr. S. T. Perry, President of the Guild, supported Mr. Lansdown and urged that co-operation between the studio carbon manufacturers and the projectionists was essential. The studios must set the standard to which the others should conform on the question of a standard density print. Evils to be tackled included the manufacturers of fancy screens, fancy carbons and fancy wide-aperture lenses. Everything depended on the standardisation of each and every part of the equipment.

Many leading technicians and projectionists joined in the discussion, as a result of which a joint committee of A.C.T. and the Guild of Projectionists is to be set up to deal with the question of prints and projection.

It is understood that in America there is a standard of foot candles screen reflection which allows every cinema, whatever its length of throw and size, to project the same quality picture. This will be one of the matters to be considered by the joint committee.

Taking a Factory to Olympia

Photograph by Gilbert Cousland

A "photographic chemical factory" was taken to the 1936 British Industries Fair at Olympia, when Messrs. Johnson & Sons exhibited their whole range of photographic developers and other photographic chemicals used in film laboratories. Our illustration shows a section of the stand photographed by Gilbert Cousland.

"Cinema Log"

By KENNETH GORDON

Television and News Schemes.

The Journal Cinemas at Mont Parnasse Station and Rue de Rivoli, have installed television receivers; also a cinema in the Rue de la Madelin. The Barthèlèmy system is being employed. The "Post Parisien" Broadcasting Station is equipped with a television broadcaster said to be the most perfect in Europe, which will be used for "Telecinema" transmission of films.

The B.B.C. and Gaumont, who are interested in Baird Television, are negotiating for the televising of the latter's news-reel, but somehow I don't think this will mature. Anyway, George Allison, of the Arsenal Football Club, means to be right up-to-date. He is installing a television box at Highbury which will take the installation of any process that may be adapted.

A Plaything for Lyndon-Haynes.

A microphone boom, 60 feet long, was used to follow the movements and still keep out of the camera range when filming Metro-Goldwyn-Mayer's "The Great Zeigfield."

New Studios.

Major Bell has just returned from Hollywood full of new ideas for his "Amalgamated Studios." The American executives and technicians have shown him the works during his stay. The latest production tricks are now an open book to him, and his studios should be the British technicians' paradise when completed. We trust our overseas friends let the Major into the secrets of American wages and conditions.

Much water has flowed under London Bridge since Major Bell constructed Islington Paramount Studios.

An Insult to British Technicians.

According to the "London Reporter," a "British Film Bank" is about to be formed, backed by the leading picture promoters, with Hollywood technicians and specialists on the Board to advise and scrutinise any project requiring capital. Perhaps these financial geniuses do not know that nearly all the key inventions connected with cinematography are the results of British technical brains. We have in this country competence without "ballyhoo." It is up to these people to attract these brains to their assistance. One production I know of, that used foreign non-ace technicians, is now on the shelf. I was informed by one of the backers, in the heat of the moment, that the film looked like "two black men fighting in a tunnel" and the dialogue and tempo was generally as slow as a funeral. The costs were thousands of pounds above schedule.

Mr. KENNETH GORDON

New Camera Gadget.

Bill Vinten has made a further improvement to his camera. This is a system of matched paired lenses, giving correct view-finding and focussing, parallax being automatically adjusted as the focus of the lenses is pulled. This is ideal for news-reel work and also for tracking shots. I have tested this camera on a 12-in. lens and found the framing was perfect at all focusses—indeed a very useful job. A suitable blimp is being made and any lens, from 24 mm. to 14-inch, can be used.

Society's Latest Hobby.

Society ladies, who used to devote their leisure to toy dogs and charities, are now adopting "foreign film-mongers" as pets. We have no objection to their hobbies, but when, in every case, the fostering of these people in the industry necessitates the vilification of British technicians, then it is time we made it clear that we will fight for our good name. We trust that these words of warning will be heeded. . . . .

Springtime.

Well, Spring is here, but at the time of going to press the flock of jobs has not matured. Unemployment is rampant, in spite of the grandoise schemes that have received so much publicity. The lot of the technicians, caused by recent fires, is a hard one. B.I.P. have practically stopped production. B. & D. are hiring floor space. But if Herbert Wilcox's statement that his Company will transfer their productions to Pinewood Studios, Iver, materialises, this happy family will be once more reunited and its technical crew working again under their usual harmonious conditions.

"Cinema Ogres."

Years back, when I was in Paris for Gaumonts, they used to have a scheme whereby all the heads and technicians met once a week around a table for a frank discussion of the week's work and an interchange of ideas. These meetings brought M. Gaumont into direct touch with his employees and created a family atmosphere which engendered inventions and suggestions which helped considerably to build the Company into the position they held in the Industry in those days.

To-day, some film chiefs tend to develop into "ogres" losing all touch with their underlings. Their departmental heads, following their lead, act as "semi-Ogres" and even the office boys have become "demi-semi-Ogres." The result of these conditions is that co-operation, so necessary for technical workers, is non-existent. Dislike, instead of

(*Continued on page* 14)

The Amateur Technician

By JOHN R. MANN (Canterbury Cine Society)

THE amateur cine movement has grown with mushroom-like rapidity in the last few years. It has been computed that the number of sub-standard cine cameras in this country alone runs well into six figures. Cameras using 16 m.m. and 9.5 m.m. film predominate, but the newly-introduced 8 m.m. film is becoming very popular, particularly with the casual "snapshooter."

This class of amateur deserves every encouragement, as the apparatus and film they purchase must employ hundreds of technicians and enable enlarged research departments to work for the benefit of the whole industry.

For purely economic reasons, the professional has neglected the field of education. Here the amateur may lead the way until a more enlightened public must inevitably call on the best brains of the industry to further this work. Amateurs, individually and collectively, have already produced films of this class dealing with sociological, technical and other subjects. Professional men are realising that films provide the best medium for recording their specialised knowledge for the edification of others.

In the pooling of knowledge and resources by the formation of societies lies the amateur's greatest hope. The number of these societies is increasing rapidly. Some are purely technical, others mainly dramatic, but the majority are devoted to furthering the art of the cinema in every way.

Canterbury Cine Society, of which the writer is a member, follows this plan. Conjointly with our productions, we run a series of weekly technical lectures given by leading figures of the film world, including Mr. Kenneth Gordon and Mr. Ivor Montagu. The larger clubs have their own studios. It may be of interest to know how they overcome some of the obstacles which would appear at first glance to be insuperable. For the moment silent films only are being considered. Amateur talking films have been made, but at present most societies are learning to walk first.

We have these advantages over the professional. Our diminutive films are very much cheaper. The lenses we use are of shorter focus, and consequently may be opened to wider apertures; even to F.1.9, and still give sufficient depth of focus. Consumption of electricity is also reduced by the use of overrun lamps. The popular Photoflood, a 200w. overrun lamp, costing only half-a-crown, gives as much actinic light as a 1000w. ordinary Tungsten lamp.

The estimated life of the Photoflood is only two hours, but they last for months if dimmed except when filming. At Canterbury we use these lamps as auxiliaries for our general lighting, which consists of ordinary 1000 and 1500 watt tungsten lamps, totalling about 10,000 watts. By using 200v. lamps on a 240v. circuit, the actinic light is doubled. The value of the light source is further enhanced by the use of specially designed papier mache parabolic reflectors, lined with tinfoil, of a much larger pattern than

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would be practicable with heavy materials used for ordinary studios. Further lighting economy is effected by shooting at 16 frames per second instead of 24.

I have tabulated these advantages as follows :—

Item.	Amateur.	Professional.	Multiple to find equivalent wattage required in professional studios.
Film	Super Pan	Super X	2/3
Frames per sec.	16	24	$1\frac{1}{2}$
Lens aperture	F.1.9	F.2.7*	2
Reflectors	Parabolic	Spherical Mirror	2
Lamps	Overrun Incandescent (200v. on 240v. mains)	Incandescent at Normal voltages	2

* Aperture suitable for studio use.

To find the wattage required on a professional set equivalent to that used at Canterbury, we multiply our total wattage by the multiples from the table, viz. :

$$10{,}000 \times 2/3 \times 1\tfrac{1}{2} \times 2 \times 2 \times 2,$$

which gives a product of 80,000 watts. The professional will appreciate that this amount of juice is sufficient for modest sets. Practical comparisons show these figures to be approximately correct.

Set construction is a great obstacle to amateurs. Sets must be kept simple, a range of standard flats being utilised as far as possible with the appropriate furniture and properties. Having decided our camera angles in advance, by the use of rough scale models, we eliminate all unnecessary construction, such as hidden returns to chimney breasts.

Amateurs generally are using Max Factor make-up for studio work, but many interesting little productions have been made without its use.

The final stages of developing and printing or reversal processing and the subsequent editing often fall on the shoulders of one or two individuals. The proud director usually claims the distinction to cut his own work in the Russian tradition. We have the greatest admiration for the work of British film editors, but the efforts of the Russians are of particular interest to us, because they have had to deal with problems more akin to our own—the smooth and logical presentation of natural untheatrical material.

Similarly, the amateur finds inspiration in films like "Man of Aran," and "Drifters," which have lifted the documentary film to the highest plane of the cinematic art.

In conclusion, it should be stated that the amateur is exceedingly grateful to the professional technician, who has brought such a wonderful hobby within his reach.

Cinema Log (*continued from page* 12).

friendship, exists, because boss and employee do not know each other, each dealing through a third party. Time is ripe for firms to set up a scheme by which ideas can be submitted directly by technicians to their chief, with their confreres helping with their personal suggestions and the whole subject being consolidated by debate.

Experimental Short-Wave Transmitting Equipment

One of our readers, Mr. G. Hewins, A.M.I.E.T., etc., has forwarded an illustration, which we are glad to reproduce, of his experimental short-wave transmitting and recording equipment, which is owned and operated by himself. The transmitter is quartz-crystal controlled and uses 100% modulation for telephony. It has been operated under the call sign G2HQ since 1921. Mr. Hewins would be pleased to get in touch with any A.C.T. member who is interested in short-wave transmitting.

The Association of Cine-Technicians

— THIRD —

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Art and the Photographer

By CHARLES J. VAN ENGER

If it is possible to analyse art scientifically, then modern photography is moving along the right path. If, on the other hand, art is to be considered as something quite different from science, something more sublime, then materialistic photography is merely an episode. But the protagonists of photography call it a new art.

Artistic creations can never be analysed or mechanicized, and the means by which art is developed cannot be regarded as its essence. It is the manner in which the means are applied, which cannot be subjected to rules. If this were the case, art would have attained the same perfection to which the technique of science has so rapidly developed, instead of degenerating in the hopeless manner it has done. Where is there an example of modern art comparable to the masterpieces of Egyptian architecture, Greek sculpture and the forceful works of Drurer and Rembrandt ? For this reason art is evidently something more than following rules and applying certain formulae and prescriptions learned from science. Or is it just an empty phrase that technique may be learned, but not art ? Art is not a matter of intellect, for it begins where intellect leaves off.

Even if all the rules applying to art were known, merely to follow them would not produce a work of art. All slavish copies, even when employing the same means, would remain hollow and lifeless. The higher the art, the more simple and inconspicuous are its means. Thus, purely technical manipulations are of secondary importance.

For the same reason that no one can become a composer merely by knowing the rules of harmony, no one who knows how to obtain certain light effects in photography by working on a still plate will be able to introduce an element of art into photography.

Some photographers assert that photography has sought pictorial effects only by imitating painting. The photographer certainly has not merely wanted to copy, but to produce real pictures whose effect depends on their feelings and not only on technical qualities.

Is it to appear that modern photography discards picturesqueness ? That it claims to be prosaically objective ? As a matter of fact, in the best examples of photography there is an element of picturesque imagination. Photography claims to be an art, and, indeed, has been acclaimed as such by critics, who are glad to label this unruly child. The demands now made on photography are that it should be purely objective, to the point, and remain within its mechanical limitations. In other words : *Its Art should lie in the Distinctness of Reproduction.*

No doubt, scenes which are novel and striking will be at first impressive, but the mere fact that they are novel does not spell *Progress*. There are photographers who have long striven to produce a new photographic art and who have made similar experiments. But they finally arrived at another conception, by recognising that routine is only the shadow, and not the substance. They are artists whose aim is to express their innermost thoughts, not only in a temporary, but in a permanent manner.

The most damning catch-word to-day is "old-fashioned." Those who employ it forget that their own work, which they consider so phenomenal, may one day deserve this appellation with more justification. What appears original to-day may be commonplace to-morrow, if it has no inherent value, and if it cannot stand the strain of continued repetition.

The advancement of photography and the advent of sound, which as a whole are considered within the mechanical sphere, have far outstripped all other branches. Sound was largely developed outside of the motion picture industry and the industry is paying the price now. If the industry had taken it seriously at the start, and developed it, instead of frowning upon its great possibilities, they would not now be in the grip of the electrical companies, who levy a large royalty on every foot of film produced, far in excess of what was spent on the development thereof.

If the industry do not take the problem more seriously and establish in each studio an experimental department in which photographers may experiment, there will some day be a repetition of the sound advent and they will be forced to pay another royalty on certain photographic processes. The present projection process was only developed by those admirable men who in the face of opposition and criticism, in their own time and with their own money, "kept on trying," and gave to the industry something that when fully developed and perfected will serve the industry in a far greater capacity than is now thought of. But their praises will probably not be sung any too loudly.

The photographer has a lot to swallow, much to modify . . . the naked truth would be intolerable, and so it is that the photographer can put out little that is new, at least not in the studio. Sometimes he may do as he pleases, when he is allowed "to keep on trying," but this seldom happens.

An object which lacks distinguishing traits and is depicted in a prosaic manner will never be attractive. It should be vested with certain charms that may be either united to external beauties or expressed by light and shade. But even this will not satisfy us in the long run. We require from the scene some indication of what is happening. Permanent satisfaction can only be obtained from the psychical content of a picture.

Furthermore, we could not have the modern projection process were it not for the highly sensitive film with which we are able to reproduce the original scene. This has much to do with the actual problem which we are trying to solve. When it has been developed to its fullest extent it will be the greatest factor in producing pictures economically and with greater pictorial possibilities. To the victor belongs the spoils ; so it is with those who can see the possibilities of this method and go into it thoroughly and without hesitation. There is much to be done before it reaches its final degree of perfection and those who are working in its development should be encouraged to the fullest extent.

They have clearly recognised the advantage and are endeavouring to develop it. This is recognisable in the perfect manner in which they treat the light on the objects photographed and the faithful and perfect results of the reproduced scenes. They show a special interest in the beautiful grey tones produced by faint shadows on a light surface. The means employed are not ideal from many angles, but

(*Continued on page* 18)

Main Entrance.

Corner of B.I.P. Studios.

Entrance to Stage "C."

Corridor.

Entrance to Stage "B."

Recording Room "B."

Entrance to Stage "A."

Photographs taken by ALEX. FISHER which show the enormous damage created by the Elstree Fire.

Art and the Photographer (*continued from page* 16).

they have rendered a great service to the production companies and with the proper encouragement the effects will be permanent.

There is much to be said for the combinations of different negatives. Pictorial effects—which are fundamentally the main object of photography, though this is not always admitted—are not only produced by straight photography. Parts can be photographed separately and combined later in a new composition. But art demands simplicity. When an object is represented in this manner there should be no element of unclearness. It should be truthfully reproduced, clear and realistic. It requires considerable taste and a thorough knowledge of the process and all its elements to deal with such scenes.

It must be recognised that the stronger the source of light the stronger the light and shadow. The sun, therefore, is mainly the source of light. From one point of view this seems immaterial, for the new art appears to be a question of inspiration and novel forms, rather than the reproduction of something permanent. But by discarding methods which have been only developed with difficulty, workers in the new art damage themselves, because it is not possible in the long run to abandon modern optical appliances which employ the actinic power of light and translate colours on to sensitive film.

When the photographer wants to create out of his own free will, he is obliged to do so in his spare time. That costs money. Has he the necessary money? As a rule not—and so he often may loose ground in the melée. But that is how some achieve the front rank: they love photography; do what they do because they love their work, and do it regardless of competition, time and money.

But the sturdy mediocre still dominate quite frequently; people for whom the word ecstacy is spelt with an "X," brave men with a steadily improving level of craftmanship. Above them the exceptions, the high lights, who have arrived through craftmanship. Does art come from knowledge? *Art Comes From Being.*

Living in a period of mental and material depression, of intellectual aridity, of marked hostility towards art, we are inclined to be over-hopeful whenever there is the slightest sign of a revival in art. As a rule our hopes are seldom fulfilled. How, indeed, can those who are alike hurried, superficial and only bent on quick profits and ephemeral sensation be the protagonists of a new art? A permanent change of style would only be possible if it emanated from a real genius.

We should make a mistake if we were to consider the new movement as a sudden and startling phenomenon. The beginnings of this new movement, which aims at picturing something altogether unknown and totally novel, are by no means recent. As a rule the average observer and critic are not interested in the manner in which the scene is made, nor in the difficulties of photographing it. But the expert is forced to estimate scenes according to the actual skill required in producing them. For example, exterior scenes in particular depend very much on chance, and the photographer must accustom himself to carefully consider his field of action; to study the relations of light and shade, and to focus his picture accurately on the ground-glass in order to make himself independent of accidental circumstances.

(*Continued on page* 25)

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Peerless System of Film Conditioning

At the invitation of British Instructional Laboratories Ltd., 8-9 Long Acre, W.C., A.C.T. recently sent a representative to view the installation and to obtain particulars of the "Peerless" System of Film Conditioning.

This is a process by which green film, both negative and positive, is lubricated and hardened without the use of the old-fashioned waxing, or of formaldehyde and alum baths with their attendant disadvantages.

After normal laboratory processing films are placed still spooled up, in racks, in a vacuum chamber and are impregnated with two distinct vaporised solutions. The first of these consists of a special lubricant, and the second a secret formula which hardens the emulsion; but the celluloid base remains in its original state.

It is claimed that when a film is treated in this manner its useful life is very considerably lengthened, as stray emulsion is not picked up by the runners or the gates of the projector, with the consequent risks of scratching.

Besides all this, the emulsion remains throughout the life of the film in a much more flexible condition, so that perforation strain is considerably reduced and breakages are not nearly so likely to occur owing to the absence of curling.

Although A.C.T. has not yet had an opportunity to test film treated by the Peerless Process, our representative was shown correspondence from many of the leading American and British Renting concerns testifying to its great value for release prints, and one letter in particular, from the head projectionist of a leading London cinema, who had tested it in direct comparison to untreated film, was particularly appreciative.

We understand that a large proportion of American prints is at present undergoing the Peerless Process as a routine part of film finishing, and at least two of the major British Renting concerns have their complete output treated in this way.

First A.C.T. Ball and Cabaret

Chiltern Hall was packed by 500 people on the occasion of the first A.C.T. Ball and Cabaret on Shrove Tuesday, 25th February, 1936.

There were many novel features and competitions, including a film winding contest and a pancake scramble. Dancing took place until 2 a.m. to Leo Croke and his Trackmakers.

The large company included Lord and Lady Marley, Alfred Denville, M.P., Bertram Mills, Anthony Asquith, Capt. and Mrs. A. G. D. West, Arthur Elton, S. S. A. Watkins, W. H. Clarke, a "Kodak" party, and, of course, many leading studio technicians.

A Cabaret was staged at midnight and the following artistes gave their services :—Ronald Frankau, Billy Merson, Mademoiselle Veronica, Max Kirby, Ann Zeigler, Cornell, Colville and José, and James McSherry.

The many enquiries received as to the date of the next function is sufficient testimony to the success of A.C.T.'s first social effort.

Incidentally, it is rumoured that all previous Chiltern Court bar-takings records went by the board!

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Laboratory Workers Organise

Low Wages and Bad Working Conditions in most Laboratories

By GEORGE H. ELVIN

Secretary, The Association of Cine-Technecians

AMONGST the several hundred new members of The Association of Cine-Technicians during the past few months there has been a large proportion of laboratory workers joining the special section which has recently been formed to cater for their needs. Apart from one unsuccessful attempt a few years ago, by an organisation whose main interests are outside the film industry, there has been no effort made, until A.C.T. formed its special section, to organise laboratory workers. The Association now has members in eight laboratories, some of which are already one hundred per cent. strong. The organisation of studio workers, through A.C.T., has been an inspiration to laboratory workers, and the Association's combined trade union and professional activities are attracting new members daily.

Laboratory Wages

A preliminary survey of wages in laboratories shews an outstanding lack of uniformity. Even laboratories which pay comparatively high wages in certain grades are the worst offenders in others. One fact does, however, clearly emerge; the general low rate of wage to laboratory workers. In certain laboratories it is imperative for employees to work regular overtime in order to bring their weekly earnings up to a living wage. In one laboratory recently it was suggested to employees that extra staff might be engaged in order to reduce the amount of overtime necessary. There was a unanimous request to the management that the suggestion should not be pursued, as owing to increased earnings through many years' continuous overtime, employees would be unable to live on their low basic wage.

GEORGE H. ELVIN.

There are competent and skilled laboratory workers earning less than wages paid to many unskilled labourers. A large number of laboratory workers can shew 20 or more years' experience, often spent with one firm. Certain grades of laboratory work are unhealthy, and only recently a case came to our notice of a man who has had 14 years' experience, mainly with one firm, when he contracted tuberculosis as a result of his dark-room environment. He is now unable to return to the only job he knows and has, of course, no pension or possible means of obtaining a livelihood elsewhere. This man's wage was under £4 per week.

The importance of laboratory work is paramount and yet there are persons on most responsible jobs scarcely drawing a living wage.

The present position appears chaotic. A.C.T. is investigating the whole question of wages and conditions in laboratories with a view to submitting a fair and equitable standard agreement to employers.

Night Work and Overtime.

Some laboratories pay their night staff $33\frac{1}{3}\%$ or 50% above the standard wage of a day worker in a similar occupation.

Overtime rates vary considerably. Some laboratories only pay overtime on Sunday. Even then, in one case it is double time, and in another merely an eight-hour guaranteed day at straight time. Where there is week-day overtime, it is sometimes a graduated rate of time, time and a half and double time; and sometimes merely time and a quarter and time and a half. The best rate paid is that of time and a half for the first two hours after the normal working day (which itself varies from laboratory to laboratory) and double time thereafter, with double time on Saturday afternoon and Sunday.

In some laboratories time off is deducted at the flat rate; in others there is no such deduction.

Standardisation Desirable

It is obvious that standardisation of wages and conditions throughout all laboratories is overdue. It seems equally apparent that such standardisation should be at least equal to the best prevailing wages and conditions. The laboratory worker is an indispensable link in film production. Remote from studio "glamour" his lot has been overlooked, although he has it in his power to make or mar a picture. Studio technicians, whose rates of pay are considerably higher, and who value the skill of the experienced laboratory worker, are surprised at this low scale of wages. A.C.T. hopes to convince laboratory executives that a reconsideration of his wages and working conditions is long overdue. In the studios the aim of A.C.T. has been to co-operate with employers to the total benefit of the industry. Quality work cannot be produced by the man who is dissatisfied with his lot. Excessive

(*Continued on page* 26)

Unemployment Insurance for Non-Manual Workers

The recommendations of the Unemployment Insurance Statutory Committee are of considerable importance to cine-technicians, and we are pleased to publish the following statement issued by the National Federation of Professional Workers.

For many years the National Federation has pressed in season and out of season for a raising of the Salary Limit in both Unemployment Insurance and Health Insurance.

The Federation has pleaded these reforms before successive Ministers of Labour and Ministers of Health respectively, before the Royal Commission on Unemployment Insurance, and more recently it gave evidence before the Unemployment Insurance Statutory Committee.

It has also held remarkably well-supported Conferences of Non-Manual Workers, and all these efforts have been directed towards achieving a new Salary Limit of £500 a year. This figure represented the almost unanimous opinion of the organised non-manual workers represented at those Conferences.

It is therefore gratifying to be able to report that a considerable measure of success is now in sight. The U.I.S.C. Report (Majority Report, signed by five out of the seven members) makes the following "Recommendation" :—

> "We recommend, accordingly, that in Part II of the First Schedule to the Unemployment Insurance Act, 1935, setting out the employments excepted from Unemployment Insurance, paragraph 9 should be amended by substituting for the present remuneration limit of two hundred and fifty pounds a year, a limit of four hundred pounds a year."

It is significant, too, that in the other main lines of its decision, the Committee follow the lines put forward in the National Federation's evidence.

Thus they decided against differential contributions and benefits, considering that the practical objections outweigh the theoretical advantages.

Also, as in the Federation's evidence, they emphasise the anomalous nature of the line of demarcation between manual and non-manual work, and again a similar parallel exists in the remarks relating to those whose rate of remuneration takes them outside the scope of insurance, although their total earnings may be well below that limit.

It will be the duty of those in Parliament who are associated with the National Federation to press for the early introduction of the necessary legislation, and to see that there is no whittling down of the Committee's proposals.

We trust that the Committee's recommendations will be put into force as speedily as possible, as such legislation will be of considerable benefit to many members, particularly those free-lance technicians who may earn well over the present statutory limit at certain short periods but whose annual earnings are totally inadequate to make necessary provisions against periodical unemployment.

Pathe Order 16 British Films

THERE is good news for technicians in W. J. Gell's announcement of his order for 16 British films for his 1936 programme. Their quality promises to be of a high standard and not merely nominal quota requirements.

This production "plum" is being shared by Pearl Productions, a new concern, and Grosvenor Films. Many A.C.T. members should benefit.

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Employment of Foreign Technicians

A.C.T. Deputation to Ministry of Labour

THE Association's case with reference to the employment of foreign technicians in the British film industry was laid before the Ministry of Labour on March 19th. The A.C.T. deputation was composed of Messrs. S. H. Cole, Desmond Dickinson, Alan Lawson and George H. Elvin, Secretary. They were cordially received, and a frank interchange of views took place, lasting nearly four hours.

The main points in the Association's case, placed before the Ministry by Mr. George H. Elvin, acting as spokesman to the deputation, were as follows :—

Number of Foreign Technicians Employed.

It is estimated that there is an average floating number of approximately 100 foreign technicians, exclusive of a large number of resident aliens, engaged in the production of British films. In the Association's opinion a large percentage of this number cannot be graded as genuinely ace technicians.

The Ministry of Labour Report for 1935 has since been published. During the year 87 film technicians applied for labour permits, all but 3 of which were granted.

In the case of applications made through the Home Office, i.e., foreigners already in this country when the application was made, the Ministry of Labour gave 26 favourable recommendations and 9 unfavourable. Therefore, out of 122 applications, the Ministry of Labour were of the opinion that all but 12 should be allowed to work in the BRITISH film industry.

Unemployment Amongst British Technicians.

At no time has the demand for technicians exceeded the supply. The volume of unemployment varies, but even in the peak period of production last summer the Employment Bureau, run by A.C.T., and which is the only technical employment agency within the film industry, was able to meet every demand.

Greatest unemployment prevails amongst camera operators, the class from which lighting cameramen graduate, and probably not more than 40% receive regular employment throughout the year.

Criticism of Present Regulations.

(1) Regulations pertaining to the employment of foreign technicians are different in England from those of other countries, particularly America, where there is now virtually a "closed shop." The Association of Cine-Technicians feels that conditions in this country should be no less rigid than elsewhere. *It would, however, welcome such a position, if it were possible, whereby there was some form of reciprocal exchange between technicians of different countries.*

(2) It is understood that in the issue of permits the entertainment industry is considered as a whole. (We were pleased to learn from the Ministry of Labour that this is now not so).

(3) There are insufficient safeguards to ensure that foreign technicians to whom permits are granted give tuition to British persons. For example, it is understood that certain foreign cameramen are each claiming to have trained the same Englishmen. Further, a foreign technician with no knowledge, or only a poor knowledge of the English language, is necessarily handicapped in imparting knowledge.

(4) The high salaries paid to film technicians seem to have an undue influence in impressing their value when an application is made for a permit. In the opinion of the Association the film industry is capable, on occasions, of paying a high salary to non-ace technicians.

The applicant's past record in cinematography seems to us immeasurably more important than his remuneration in determining his capabilities and value to the British film industry.

(5) The large number of foreign technicians in key positions retards the promotion of promising Britishers. In businesses, *other* than the film industry, it is the general practice, if one particular man is not available, to engage the next best available person. We feel it would be to the general benefit of the British Film Industry if, through the refusal of permits, this practice was followed more regularly. It is appreciated that owing to the various types of pictures, from a short to a full feature, each involving an entirely different technique, promotion *within* any one firm is difficult and often inadvisable. But it would be possible, through the medium of an organisation which cuts right across the whole industry, to arrange for judicious transfer of labour and promotion of promising juniors. It is felt that The Association of Cine-Technicians could do this work as it does already, to a small extent, through its Employment Bureau.

The Association of Cine-Technicians has appointed a Membership Advisory Committee, composed of leading technicians, which is in the process of grading British technicians with the above object in view.

Examples were given to prove that certain camera operators can, where given the opportunity, prove their ability to do a lighting cameraman's work. The Association feels that there are many other technicians who, given similar opportunities, could become senior technicians.

(6) There are loopholes through which technicians may work without obtaining a permit. Specific cases were outlined to the Ministry of Labour and in one case it was proved that two experienced and competent British editors had lost their employment.

(7) The present regulations apparently allow a foreign technician to change his employment or be let out to another company without leaving the country. The deputation quoted several cases. We are of the opinion that if the company which is instrumental in bringing a foreign technician into the country does not want his services, he should not be "let out," often at a profit, or allowed to work elsewhere. The Ministry of Labour informed the deputation that any such change contravenes the regulations, and both the technician and company concerned must notify the authorities when a change of employment is contemplated.

(8) Incompetent technicians are allowed into the country. Again several instances were quoted to the Ministry of Labour.

(9) Technicians are allowed into the country on grounds that are not in accord with fact. Here also specific cases were quoted.

(10) We feel that the type of picture which is to be made should also be borne in mind when permits are being considered. For example, typically British pictures, particularly comedies, are likely to produce better results when handled by British technicians, yet foreign technicians are frequently employed on this type of film.

(11) There appears to be a tendency for a foreign technician to remain in the country for an excessive period of time, often long after his usefulness to the film industry has expired.

(12) A.C.T. is of the opinion that factors other than technical ability have influenced the granting of permits. For example, a foreign technician's inability to speak English may lead to foreign, or partially foreign crews. Another malpractice, in the Association's opinion, is that of paying commission to a foreign technician on any monies he is instrumental in bringing into the company of his employment.

Conditions under which The Association of Cine-Technicians is not Opposed to Foreign Technicians Working in British Films.

It was made clear that the Association of Cine-Technicians is not opposed to foreign technicians working in the British Film Industry, in reasonable numbers, provided that :—

(*a*) They are ace men.

(*b*) Their crews are British.

(*c*) Their employment does not deprive equally expert British technicians of employment.

There have been instances when a foreign cameraman has been granted a permit while competent British cameramen have been without employment.

(*d*) They are not engaged to work under less favourable conditions and salaries than those of British technicians.

(*e*) The Association is given an opportunity of being consulted when renewals of such permits are applied for.

It is felt that the above conditions are not regularly observed and that the claims of certain individuals to be ace technicians are not fully investigated, or, if they are, the fact that they are not definitely in the front rank does not necessarily lead to the refusal of permits.

General Observations.

The Association feels that certain of the reforms necessary pertaining to the employment of foreign technicians may be bound up with the future of the Cinematograph Films Act, 1927.

Many British technicians never get a chance to do good work through constant employment on what is known as "quickies." American and continental technicians never work on this type of picture, which are frequently produced merely to serve a footage quota purpose. Part of the difficulty in this connection is caused through certain American companies having signed an agreement not to pay more than £1 a foot for quota pictures.

Foreign Technicians in Membership of A.C.T.

It is well known that certain foreign technicians are members of the Association of Cine-Technicians and, on occasions, this fact may have been used as a lever to obtain a renewal of permit. We should like, therefore, to point out that it is our policy that leading technicians of whatever nationality should be members of their appropriate trade union while employed in this country. All such persons are admitted as temporary members, without the power to vote, and every such member is informed at the time of his election that membership of A.C.T. does not *necessarily* imply that the Association will support an application for a renewal of permit should one be made on the member's behalf.

Conclusion.

The Association of Cine-Technicians is not unmindful of the important part played by technicians of other countries in the development of the British film industry, but it does feel that, particularly in view of the number of competent British technicians without regular employment, some of whom are moreover qualified for higher grade work than their normal employment, the whole question of the issue of working permits requires careful overhaul.

We trust that the foregoing observations by members of the Association, representatives of those whose livelihood Acts of Parliament and labour regulations aim to protect, will be borne in mind when next an overhaul of the regulations takes place, which in our considered opinion should be as soon as practicable.

The deputation was greatly impressed with the cordial way in which their views were received. It is confident that several of the causes for dissatisfaction will be remedied, as is indicated by developments since the deputation was received, and A.C.T. is to report back in six months' time and state its reactions to the Ministry of Labour regulations during that period.

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Our Glorious Past

By WILL DAY, F.R.P.S., F.R.S.A.

I OFTEN wonder if cine-technicians of the present day ever give a thought to the cine-technicians of yesterday, when a man had to understand thoroughly the whole routine of the movies from A to Z. To-day every branch of the industry has a special staff to deal with each separate unit, until the organisation connected with the production side alone calls for a vast army of highly-skilled operatives, with plant and machinery never hitherto dreamed of.

In the early days of the moving pictures the first instruments were made to do all three operations, viz., camera, printer and projector, and it is astonishing to see the really remarkable results that were obtained by these machines. During the Lumière celebrations, on February 20th, 1936, at the Polytechnic, I demonstrated the actual Lumière machine used by Monsieur F. Trewey, which gave the very first regular show of moving pictures to a public audience in England, exactly 40 years previously, and I projected twelve of the films actually taken and printed on the same machine. It was a great surprise to the whole of my audience upon that occasion to see the remarkable quality, and the supreme steadiness of the pictures, and it is interesting to compare the cost of that complete outfit (which, by the way, can be seen any day, Sundays included, in my historical collection at the Science Museum, South Kensington) with the necessary plant to accomplish the same results at the present day, costing many thousands of pounds and using aeroplanes and every other means of rapid transport, whereas horse-cabs and similar vehicles used to be rapid enough to give us pictures of many topical events, which were shown in London the same night.

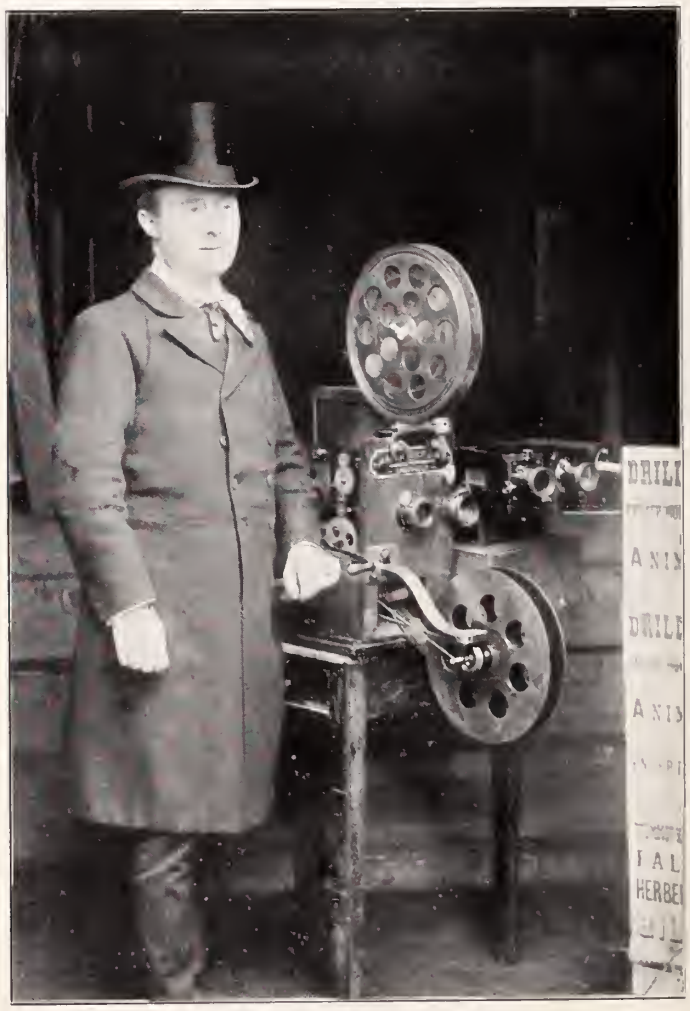
Many and amusing were some of the incidents which I personally call to mind. On the occasion of the Lord Mayor's Show, of November 9th, 1896, Trewey set out with his apparatus to take a film of that spectacular event, and, with a real London fog prevailing, all he managed to get for his picture was a few horses' heads and some dim outlines of soldiers lining the route of the procession. I can imagine what would be said if a cameraman brought back such a result at the present day, and could visualise the atmosphere about Wardour Street changing to either a fiery red or a sulphurous blue, and my old friend Kenneth Gordon kneeling down in an attitude of supplication, offering up a short prayer for the unfortunate news-hound who had brought in the results. Such a small matter, however, did not affect Trewey, who not only covered the front of the Empire Theatre, Leicester Square, with bills inviting people to see a living picture of London in a fog, but boosted the picture in the press, and, believe it or not, filled the Empire to capacity nightly, to see his picture of the Lord Mayor's Show taken in a fog.

Of course, both film stock and lenses have altered considerably since that day, as in 1896 the lens was somewhere about F.8, and the stock at 200 H. &. D. Compare these values with the present day speeds!

The credit for the first news picture of a topical event, taken to be shown upon the screen, must go to R. W. Paul, who filmed the "Derby" of 1896 when Persimmon won that classic for H.R.H. The Prince of Wales, later King Edward VII. This film I also showed during the exhibition of early films at the Polytechnic. This little film caused much laughter, as all the policemen on the course were seen wearing beards, the cry of the "Beaver" at that period having not yet been heard in the land.

Whilst talking of this film, I must confess to my own sins regarding the exhibition of this picture. At my early shows at the Alexandra Palace, I always advertised that the "Derby" would be positively shown that night, but year after year it was always the same "Derby" that was shown, until one of my regular patrons brought me a bag of sugar for "Persimmon," saying it was such an old favourite that he could not let the opportunity pass another year without offering some reward to the horse. This decided me to alter my programme, and ever after I screened the actual "Derby" film within a day or two of the event, and it also induced me to keep and carefully preserve the copy of this picture now in my collection.

Whenever I see the "Grand National" picture, it always reminds me of many of the early film houses and the rivalry that existed between them in their endeavour to secure the



A Technician of the Early School.

best picture of this event. Upon one occasion a well-known trade personality had out-bid his competitors and secured the sole rights to film this great race, and, much to his disgust, found a rival firm had erected a stand just outside the railings, whilst his own men were inside with a clear uninterrupted view of the course. Many were the jeers passed between the different groups, and it caused a great deal of laughter amongst the men outside the enclosure to see those within laying down several trusses of straw, who naively asked if they had brought their beds and if they intended to stop for the night. But their laughter was turned to hatred, for just as the race started a match was put to the straw and an effective smoke-screen spoilt any chance that the rival group outside the railings may have had of securing a picture.

Upon another occasion, when Mr. Charles Urban had secured the rights to film the Grand National, he went to the trouble and expense of fitting out two milk coaches as dark rooms and developing rooms. These were attached to the special race train and upon their arrival at Aintree were shunted on to a siding, ready to attach to a special engine to express back to London immediately after the race. Having filmed the various sections of the race at different points along the course, the operatives returned to the trucks ready to develop the various sections, but their feelings can be better imagined than described when they discovered that during the shunting operations the tanks containing the developing solution had been thrown down and the contents wasted. This necessitated making some fresh solution at once, which caused much delay on the homeward journey, with the result that, upon arrival of the train at the London terminus, the negative was still in a very sticky condition and was unfit to be removed from the drum. This gave Mr. Urban a chance to display his resourcefulness, as he at once engaged six four-wheel cabs, and taking six of his men he got them to hold their arms out at full length and wound the negative off the drum around their extended arms and despatched them with all speed back to his Wardour Street premises, where the different sections of negative film were placed upon a drying drum and were quickly prepared for use, many prints being at once run off, and so the "Grand National" was seen at all the leading Music Halls within 100 miles of London the same night.

Operating an exhibition of Movies up till the year 1910 was no mean task, and called for a great deal of knowledge and adaptability on the part of the technician entrusted with a show of Movies. Quite 80% of the shows were given with limelight, and often a man was called upon to generate his own oxygen in a retort, using cakes of black oxide of manganese for the purpose. It has been my own experience more than once to arrive in a town with a set of apparatus, including the erection of the screen, and be ready for showing within less than half-an-hour of arrival. This meant getting the screen erected and in most cases wetted to keep the light on the surface, and fitting up machine and gas cylinders, with forms fixed lengthwise around the projector, to keep the audience from crowding on top of you and the apparatus. A rather amusing episode occurred on one occasion when I was managing director of Walter Tyler's, having had a serious complaint from a show we had contracted to run for a given period to supply operator, machine and films at a Hall in Southend. Being rather short of staff at the time, I despatched a very experienced lanternist to run the show the next night, but again it was my experience to receive a terrible letter of complaint from the owners of the Hall. It appeared the Hall in question was fitted with a gallery at one end, and as it was at a period before the regulations came into force insisting on an iron house being erected to encase the projector, for protection in the event of fire, the projector was fitted up on the rail of the gallery at the end of the Hall. It appears that before starting the show, the operator addressed the audience somewhat in the following manner :—

"Ladies and Gentlemen. Hi (!) Ham (!) the Champion Hoperator of London, 'aving been sent down 'ere by Mr. Will Day of London to give you a first-class show, and with your kind indulgence I shall now commence the entertainment, thanking you kindly one and all for your attendance here to-night."

Then it appears the show was started, and to prove his ability as a champion operator, the film was projected upside down. After a serious wait, with the audience getting very troublesome, this error was corrected and the show proceeded to the entire satisfaction of the operator and the audience, as in his haste to get the show going the champion had omitted to attach the end of the film to the clip on the re-wind spool, with the result that the film ran straight down into the hall below, and there could hardly have been one person in that audience but what did not go away with a sample of film as a souvenir, for as fast as the film ran down, so it was torn off into strips and passed to all who cared to take it. Needless to say, the champion Hoperator was looking for another job the next day.

In conclusion, I should like to say that the illustration of a technician of the early school may be interesting from the point of view that it might suggest a national garb to be worn by the Royal and Ancient Order of Cinematograph Technicians. Wouldn't Wardour Street look *loverly* ? And I am sure my old friend Will Gillin would be justly proud.

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A.C.T. Winter Programme

The concluding fixtures of the A.C.T. Winter Programme have now been held, and were as follows :—

Monday, March 2nd—Film Show, "What is the World," by kind permission of Dr. Becker and Technique Films, Ltd.

Monday, March 16th—Lecture : "Selling a Film and Publicity," by Mr. Robb Lawson, late Publicity Director, United Artists' Corporation, Ltd.

Monday, April 6th—Film Show : "Hey-Rup," by kind permission of Universe Film Services, Ltd.

Art and the Photographer (*continued from page* 18).

Flower subjects can teach him the rudiments of tasteful composition. Small and large animals, often both lively and obstinate and infinitely difficult to photograph, can teach him to depict not only the external form but also to mirror their inner life. He should remember that all animate subjects are objects in themselves, not necessarily tied to any particular surroundings. The foreground and background should be taken into account. The question to be considered is the picturesque treatment of the different planes. Some make the mistake of producing unpleasant haziness by incorrectly focussed details. This is because they are slaves of their sharply dilineating astigmatism and dread modern optical instruments.

Correspondence

THE QUOTA ACT

I was most interested in the article in the current *Journal* on the all-important subject of the Quota Act.

Whilst I am in complete agreement with your proposals, I feel that in fairness to this studio I should throw a little light on what you term "general" practices employed in the making of quota pictures.

Twelve quota films were made at this studio by independent producers in 1935, apart from three first feature productions which, though eligible to count as quota, cost upwards of £25,000 each and so can scarcely be called quota films in the accepted sense.

Of the twelve genuine quota pictures, one was booked on its own merits to Scandinavia, a second to Australia and a third was booked by the Gaumont-British Circuit, despite the fact that it was being distributed by an American company. Of the remaining nine films, despite the obvious policy of the trade press to discourage quota pictures, only two received bad notices.

None of the above-mentioned twelve pictures cost more than £1 per foot, so perhaps I may be permitted to give you the hours worked and the basis of overtime paid to our staff.

Producers are allowed to use the studio free of overtime from 9 a.m. to 8 p.m. five days a week and from 9 a.m. to 6 p.m. on Saturdays. A full hour's break for lunch and fifteen minutes for tea are compulsory. If the producer wishes to work after 8 p.m. he can only do so by making a break of forty-five minutes, starting between 8 and 8.30 p.m.

The hourly staff are subject to the conditions and rates of pay prescribed by their union, while all members of our permanent staff earning less than £10 per week receive overtime after 6 p.m. and double time after midnight.

Largely as a result of these conditions, no producer worked later than 11 p.m., and then only on an average of once per picture, each picture being scheduled for 10 or 12 days.

For Sunday work the studio levies £35 in addition to a normal day's rental, and double rates for the entire staff, consequently it is made practically uncommercial for the producer of a quota film to work on a Sunday, and *on no occasion during the making of quota pictures throughout the whole of* 1935 *did we shoot on a Sunday.*

The average finishing time on week-days over the whole year was 8 *p.m.*

From experience I have found that the greater the cost of a production the harder the studio staff is worked. This is due to the fact that on a super production artistes' salaries on one day, if saved, will more than cover the increased cost of working the studio staff until the early hours every day for a week.

To find the solution to all this overtime and overworking, therefore, one must start at the top and work downwards, rather than make the regulations apply merely to quota pictures.

I trust that this letter may serve to show you that though the control of the quality of quota films is not always in the hands of the studios utilised for such production, the improvement in the working conditions of the staff in this case has gone some way towards raising the standard of quota films now being made.

If, therefore, as you suggest, a minimum cost per foot or per picture is imposed under the new Act, then with the co-operation between studios and producers on the basis I have endeavoured to outline, quota quickies will become a thing of the past and the film business will have taken a further step towards becoming an orderly and efficient industry.

Yours etc.,

DESMOND S. TEW,
General Manager, Nettlefold Studios.

BACK PROJECTION.

I was very interested in the observations on "Back Projection," by Charles E. Knott, in your February issue, and I think the following details may be of interest.

The first "Back Projection" was used in a silent film called "The Third Eye," directed by Mr. Maclean Rogers, photographed by Mr. Geoffrey Faithfull.

The story called for a television set, on one side of which was a map of London with a number of plug sockets inserted in different areas, and to the right of this a screen on which the view appeared according to the area selected. Much of this was accomplished by double exposure, but the real problem arose when the actors had to move in front of the set with the view showing. For stationary sets we back projected lantern slides, such as the interior of bank vaults. It was a crook story, but the real problem arose when we came to moving objects with the actors in the foreground. "Back Projection" was essential and we had just another instance of "Necessity being the Mother of Invention." We were not handicapped by screen area or intensity of illumination, the screen being approximately 2 ft. by 1 ft. 6 in. Synchronization did not bother us, as both Mr. Faithfull and myself, having worked on singing pictures, had long experience in synchronizing two machines. So "Back Projection" was accomplished equal to anything that has been done since. At the time we could see no further than the job in hand.

The Italian invention to which you refer was not so much "Back Projection" as "Back Photography," in the sense that the viewfinder at the back of the camera was substituted for a lens and an object could be superimposed on the view photographed by the front lens, using a shutter front and back of the film.

Regarding the use of synchronous motors, there was a system in use in 1910 for synchronizing two machines, projector and gramophone, but it was killed by the exorbitant cost in those days, as against the other systems in use, one method costing as little as five pounds. Indeed, it was a job to get much more for this "Novelty" in those days!

Yours etc.,

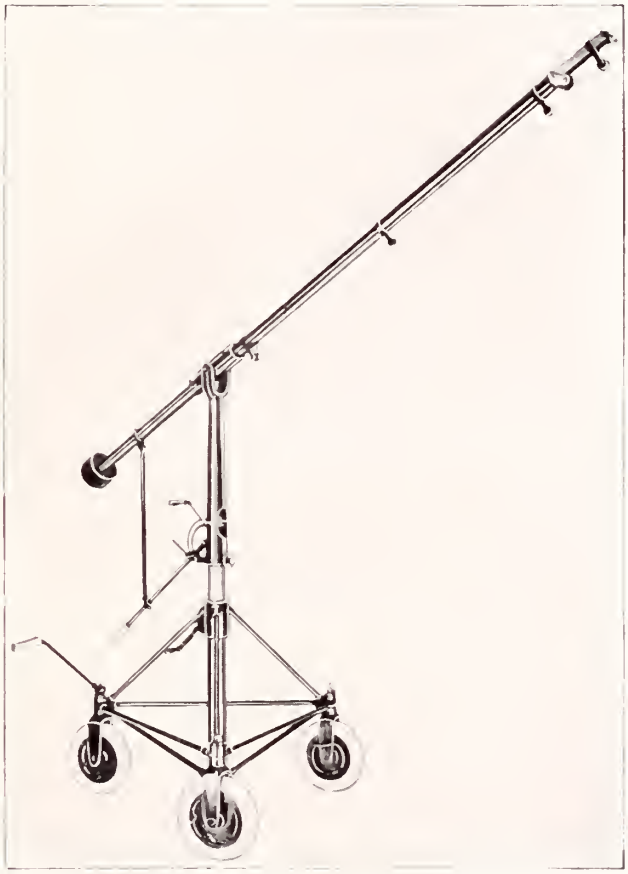
W. BOWDEN.

Laboratory Workers Organise (*continued from page* 20).

hours, low wages and continuous overtime must react detrimentally upon the quality of work.

Laboratory workers are joining A.C.T. because they are convinced they have a just cause. We trust the industry will co-operate with the Association of Cine-Technicians to meet the claims of those whose skill has contributed in no small way to the improved and improving standard of British films.

PRECISION EQUIPMENT. No. 3.



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A Year's Good Progress

Third Annual Report of The Association of Cine-Technicians

THE Third Annual Conference of the Association of Cine-Technicians will be held on Sunday, May 10th, 1936, at Anderton's Hotel, Fleet Street, E.C.4, commencing at 2.30 p.m., with Mr. Ivor Montagu in the Chair.

The subjects to be discussed include Insurance and Superannuation, non-political affiliation to the Trades Union Congress, conditions of employment, the "Quota Act" and the employment of foreign technicians in the British film industry.

All Paid-up Members and Temporary Members of the Association are entitled, and should make a special effort, to attend. Non-members may attend as visitors provided application is made in advance for credentials.

The Third Annual Report has now been circulated to members together with a covering letter bringing activities of the Association up-to-date. Many activities have been reported in the Journal from time to time. Other principal items are :—

Membership.

Membership of the Association is now 845, an increase of 757 since last year's report and an increase of 240 during the past three and a half months. In addition, the Motion Picture Society of India, a kindred organisation, has affiliated, as well as the Associated Realist Film Producers Ltd., the organisation of the documentary directors.

Conditions of Employment.

While the past year has been mainly occupied in consolidating the membership of the Association, much useful work pertaining to conditions of employment has been accomplished.

The Association has opened negotiations with Gaumont-British Picture Corporation Ltd., for the signing of a standard contract of salaries and conditions of employment. There have been delays, but, as a result of recent meetings of the Gaumont-British staff, negotiations have been resumed.

The General Council is drawing up a standard agreement for the consideration of all productive companies, studios and laboratories. The report gives details of the overtime rates paid at A.T.P. Studios after consultation with A.C.T. officers at the studios.

Mention is also made of the fact that certain of the smaller companies have consulted and taken the advice of the Association as to the proper salary to be paid to technicians engaged through the A.C.T. Employment Bureau.

Employment Bureau.

The A.C.T. Employment Bureau has been registered with the London County Council.

During the year over 40 employers applied to the Bureau for staff, resulting in approximately 150 vacancies being

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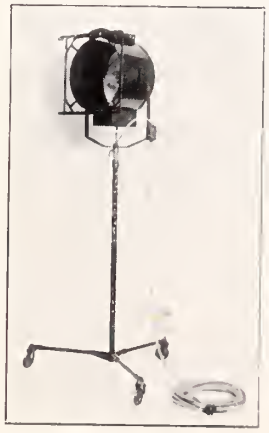

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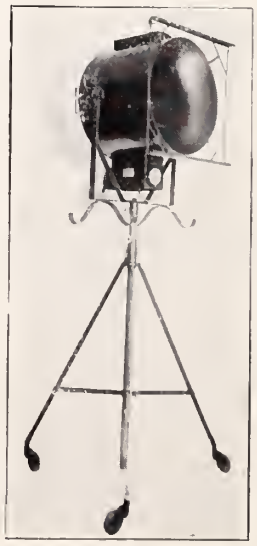

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W. PITCHER, 181 Blackfriars Road, London, S.E.1

filled. So far in 1936, 25 companies have used the Bureau and nearly 100 technicians have been put in contact with employers.

Foreign Technicians.

The Ministry of Labour received a deputation from the Association on March 19th, 1936. A report will be found on another page.

Membership Advisory Committee.

A Membership Advisory Committee has been set up, the main purpose of which is to collate accurate records of British technicians and evolve a grading scheme. Such information is particularly useful in connection with the A.C.T. Employment Bureau.

Kindred Organisations.

The Association has established and maintained friendly co-operation with the Royal Photographic Society, the British Kinematograph Society and the Guild of Projectionists, and has co-operated with and been officially represented at functions organised by these bodies.

Joint meetings have been held with officials of the Electrical Trades Union and the National Association of Theatrical Employees, with which bodies it is hoped to agree upon a line of demarcation between the scopes of each organisation within the industry.

Manor House Hospital.

Thirty-eight members of the Association have taken advantage of membership of Manor House Hospital, which may be obtained by payment of a penny per week subscription. Three of these members have already had treatment—one has had consultations and treatment from a foremost Specialist.

The advantages of membership are emphasised, and the General Council urges all members in their own interests to to take up membership of Manor House Hospital.

Legal Advice and Assistance.

The Council acknowledges its indebtedness to Mr. R. S. W. Pollard and Mr. Neil Lawson, the Association's Honorary Solicitor and Barrister respectively, for their services to the Association. It has been possible to obtain money for members in respect of broken contracts, advice on individual contracts of employment, and generally safeguard legally members' interests.

"The Journal of the Association of Cine-Technicians."

Four numbers of "The Journal of the Association of Cine-Technicians" have been published to date. The report gives details of the subjects covered and names of prominent contributors.

Technical Advancement.

A Technical Research Committee has been appointed, whose main purpose is to investigate and report on new technical inventions and apparatus, and to arrange for lectures and demonstrations.

(*Continued on page* 31)

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Recent Publications

Plan for Cinema, by Dallas Bower. Dent. 7/6 net.

The value of this book lies, not so much in its statements and opinions, interesting as these are, but in its being the first attempt by a practised film technician to deal with the possible impact upon the present cinema of colour, stereoscopy and television. I shy away from the kind of film book that has increased recently, in which some enthusiast decides it is time the cinema had an aesthetic, and so analyses it into a book full of ingenious and minute definitions. Mr. Bower, although a little too discursive at times, keeps close to the background of his wide technical experience; and consequently gives us a book valuable to technicians even when we disagree with his arguments.

My own chief disagreement centres on "the King Charles' head" of the book—editing. At times, Mr. Bower gives the impression that the most desirable feature of the three-dimensional colour film will be the almost total absence of cutting. He bases the alleged inevitability of this development on the impracticability of the quick cutting together of colour shots. He says, in effect, that the colour film will, for certain reasons, be difficult to cut; therefore, he says, we must not cut. But surely what we must do, on the contrary, is to see how far we may overcome these difficulties, in order to preserve what seems to me the essential and peculiar property of the cinema—whether black-and-white and two-dimensional, or coloured and stereoscopic—the capacity for instantaneous transfer from scene to scene, the ability to leap from peak to dramatic peak—*i.e.*, the cut. Compare the coming of sound. Many of Mr. Bower's arguments could have been used then. In fact, sound did *temporarily* reduce the importance of the cut; but as the inherent difficulties of sound have been overcome, the cut has regained its former importance, though with different application, of course.

He points out, very truly, the peculiar appositeness of Russian quick cutting or montage to the social conditions in which it occurred—"Action is peculiarly amenable to a people in revolt"—and which it portrayed. But I fancy he has, unconsciously perhaps, made this true criticism the basis for a less discriminating criticism of cutting in general.

Elsewhere he says, "The camera *per se* can only reproduce . . . . from where it happens to see has no meaning aesthetically. Essentially a selective in distinction to a creative process." But in the ultimate analysis, it is not the *camera* that sees—it is the *director* who sees, through the medium of the camera. And the vision of the film director is potentially as valid aesthetically as that of the painter or musician. And surely it is creation, rather than selection, when natural forms are arranged (as they normally are in the studio film) in deliberate groupings to be shot from some pre-conceived angle. He makes a point, when he says "The shot, then, is the raw material, like the word." But that does not make the individual shot selective; the *total* work of the director is *creative*, and the making of the individual shot is part of that process of creation.

On the possible future of a solid natural-colour cinema, the author is lively and provocative. He foresees a four-sided (later a cylindrical) screen, which will present simultaneously viewpoints all round the subject shown, together with a revolving auditorium to complete the stereoscopic illusion. In some such way, he sees a future for the presentation of such vast projects as Thomas Hardy's "The Dynasts" or for Wagner's "The Ring," or rather of the work of their successors, the solid-cinema poets of the future.

SIDNEY COLE.

The Movies on Trial. Compiled and edited by William J. Perlman. Macmillan, 10/6 net.

The Movies on Trial is a symposium of views and opinions of well-known (to America) public people, including a journalist, a judge, a minister, an actor, a poetess, an agricultural economist, a playwright, a stage producer, and a dramatic critic. It can be recommended to all technicians who want to understand the various tastes to be catered for by the Industry.

The book appears to convey two opinions: (1) That the movie business is not so black as it is painted; and (2) That the movies are responsible for all the filth, etc., etc., etc., in fact worse than that!

Some of the opinions are unconsciously funny. The reverend gentleman from his article has apparently seen nothing on the screen except "Rape, Seduction, etc., etc." While I am fully aware that such things are screened, in Paris and Port Said, I never have seen them on the public screen in such prominence as he states. If I have, I must have been unaware of the fact, either because my mind is so pure that I couldn't understand it anyway, or because my mind is so foul that what I saw seemed comparatively clean to me.

All these moral reformists seem to forget that the first and foremost object of the Cinema is to entertain and not, as is their supposition, to "educate." It would appear that they want a State Censorship à la Nazi. Heaven protect the Film Trade!

"The movies' bad effect on children myth" is finally exploded by Ben Lindsey, a Judge of the Superior Court of Los Angeles, whose article is one of the best in the book.

Never before have I realised that there were so many high-falutin' Puritanical maniacs, who would cleanse the world of that menace—"The Filthy Picture." Well, if "Bengal Lancer," Modern Times," "The Thin Man," "Henry the Eighth," "Sanders of the River," "Nell Gwyn," "Strike Me Pink," and all the thousands of others, are such, all I can say is . . . let's have more *Filthy Pictures*.

"OBSERVER."

The Dufaycolor Process. Published by Ilford Ltd. (Price not stated).

This is a short, attractively-bound booklet of forty pages with four colour plates. The latter are photographed on to Ilford Panchromatic process plates through tricolour filters from Dufaycolor originals. These are particularly pleasing, and the colours appear very true to life.

First of all, we are given a simple, concise explanation of how the process works, and this is followed by advice on the manipulation of the film; loading the dark-slides, the difference between the two types of stock available—one roll-film and the other flat film, correct use of filters, calculation of exposures, etc., with special reference to the Ilford Photo-Electric Exposure Meter. Details of developing and the method of completing the processing by reversal are clearly set out with full details of the solutions used.

The next ten pages deal more or less exhaustively with the various applications of Dufaycolor. These, however, do not include any reference to 35 mm. cinematography and no details are given regarding the reproduction of duplicates from the original print. At the end of the booklet it is stated that this matter is too complicated for the amateur to attempt, but that a special process enables good copies and enlargements to be supplied by the manufacturers.

The last section deals with colour separation negatives from Dufaycolor transparencies and the possibilities of making satisfactory monochrome negatives from the same source.

The booklet concludes with notes on the service offered by Ilford Ltd. and hints on the correct method of ordering the film.

The book is very useful for the amateur user of still and sub-standard cinematograph apparatus, but motion-picture technicians look forward to the publication of a further description of the application of Dufaycolor to standard cinematograph film.

C. J. P.

Film Acting. By V. I. Pudovkin. George Newnes Ltd. 7/6 net.

This collection of lectures is the first statement from Pudovkin since he worked in the medium of the sound film. If those who have followed his career have any misconception as to his attitude to professional acting, he here establishes the fact that he considers the trained actor of first-class importance in film work. But, apart from a clear definition of the difference between cinematic and theatrical acting, and some wise suggestions concerning the rehersal of actors, his discussion is consistently Utopian. Actors, apparently, should work on the scenario, act, and aid in the editing. In his enthusiasm to establish the film actor as an artist, in the fullest sense of the term, he appears, in the course of his lecturing, to forget the director, who is actually the "artist" in film work to whom everything—camera actors, sets, locations, etc.—is so much material which must, for success, be welded into one whole. All cinematic work is hampered enough by the need for vast co-operation in ideas and execution ; if the actors are added to the throng (but, being artists, they will, *of course*, regard the work as a whole, and will edit anything, even themselves, out of the picture if at any point the matter is harmful to the artistic oneness !), will the business not die of self-poisoning ? However, there is a touching note near the end of the book when Pudovkin says that he himself does not manage to carry out these theories !

If the curious English of this translation can be digested, there is an agreeable atmosphere of respect for all the components of film work, which provides a happier basis for discussion and serious work than is found in most commercial studios. And Pudovkin is sincere ; which, alone, is a strong recommendation to read and argue his ideas.

Royal Photographic Society

The Association of Cine-Technicians has been elected to membership of the Royal Photographic Alliance.

The benefits which members may derive from such affiliation are enumerated in detail in the article elsewhere by Mr. D. A. Spencer, President of the Royal Photographic Society.

A Year's Good Progress (*continued from page* 29)

Apprenticeship Schemes.

The Secretary has had interviews with officials of the City & Guilds of London Institute, and the Technology Section of the L.C.C. Education Committee, as a result of which it is hoped that examinations and training schemes in cinematography will be instituted. The L.C.C. official is discussing with his Committee the possibility of a Cinematography School as part of the next triennial education programme in two years' time. In the meantime, it is hoped to institute evening courses at reasonable fees.

Quota Act.

The Board of Trade Committee to enquire into the position of British Films, having in mind the approaching expiry of the Cinematograph Films Act, 1927, has agreed to receive evidence from the Association and a detailed case is now in the course of preparation, and will be submitted for discussion, amendment if necessary and approval to the forthcoming Annual Conference.

Conclusion.

The report concludes : "The General Council looks back with pride upon its past year's work, which demonstrates the benefits cine-technicians can derive from membership of an appropriate organisation. The Council urges members to influence those technicians still outside A.C.T. to join, as only by one hundred per cent organisation can the full benefits of membership be realised."

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POG.

* * * *

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ART DIRECTOR—Short or long for "Artist" . . . which means, 'art,' meaning already known; 'ist,' short for "that is not," hence the full meaning is—"If that is art, conceal it."

BOOTH (No confusion with the spirit of that name)—A structure wherein rests or lies the sound man or men, sound asleep.

BOOM—Naval term for bar. Private, or otherwise.

BOOMMAN—One who lingers therein, or thereon.

CAMERA—'Cam' meaning . . . "that which revolves"; 'era' meaning "time," hence 'revolving Time' . . . According to Einstein, Time has always existed, so how can it revolve? It doesn't exist . . . and so, there is no such thing as camera. . . . That makes us both screwy.

CAMERAMAN—From the above, just one who is screwy too.

CARPENTER—Man with 4-in. nail in mouth, white apron, sawdust in hair and a far-away look. . . . See Clock.

CARTOON—Interesting derivation. . . . As 'spittoon' is derived, so is cartoon. . . . 'Spit,' meaning already known; 'oon' meaning receptacle, hence "cartoon" means something to hold a cart, such as . . . barn or shed, or what you will, or will you?

CLOCK—See Carpenter.

CONTINUITY—That which goes on and on (and perhaps up and up) but sometimes takes a wrong turning.

CUTTER—Naval term, or see current issue of "Tailors' World."

* * * *

World Wide View taken by Pog.

Spain.

Large Studio Fire destroys one of the Biggest Floors in Barcelona. . . . No, Nuts weren't the cause this time. . . . The film business is getting quite flamboyant these days.

* * * *

Hollywood.

Stanley Lupino saying that the difference between Hollywood and England is that, in the former, they eat, drink, talk and dream pictures; while in London when day is done—day is done. . . . Well, well, little man, they are certainly lucky to be able to eat, drink, sleep and dream, as in most studios here they don't know the difference between night and day. Or maybe you wouldn't know that! Hey-ho! Laugh that one off, wise guy!

At the Screen Artists' Ball in Los Angeles there were 500 guests. . . . . Not bad! We did as good as they and we had as many "Real" people there, too.

* * * *

San Diego.

"Nudes" Okay at S.D. Expo, but "Barkers" to be dressed down . . . or so says "Variety."

New York.

Advert in New York Suburban cinema during the recent freeze. . . . "Keep Warm In Side for 10 c. Also pretty good Western."

* * * *

England.

B.O.'s recover 95% Potency (extract of "Variety" headlines). . . . . How are your best friends these days?

* * * *

Things We Want To Know.

What is an Illuminant?
Who is Quickie?
What is an Ace?
Do Film Folk drink only water at dances?
Whether or not some of the B.I.P. camera dept. have taken to using scent. . . . Us boys are dreadful now. . . . WooH.

* * * *

Poet's Corner.

Chinese Folk Song—Very Old. In fact it Smells.
What a wonderful bird the Frog are,
When he hop he fly,
Almost!
He hasn't got much legs,
Hardly!

Published by kind permission of the Stoll A.C.T. Camera Dept. . . . Thanks, Mrs. Gooseberry.

* * * *

Foot Note or Moments with the Great.

Ernst Lubitsch says "we look ahead too much." I think we look into the dark too much, but, of course, we great men always did disagree.

* * * *

Things Every Technician Should Know.

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1. The magnitude of their salary (if any) measured in half-pints.
2. The muzzle velocity of a 2-in. Lens? (With thanks to A.E.G.).
3. The correct way to fog a 1000 ft. roll of S.S. Pan and how to dispose of it, without getting rumbled.
4. What is a good substitute for a Director?
5. What is a Director usually called by his staff?
6. What relationship has Einstein's Relativity Theory with the Executives of any one studio?

N.B.—Not more than one question should be answered at any one time, taking into full consideration the height of the sun over the Tropic of Capricorn and also the consequences if:—All the film used in the world were to be wrapped round the earth and set on fire.

* * * *

Well, "Acetians," get ready for the Annual General on May 10th. Gargle the throat well; practice breathing exercises; make your speech beforehand in front of a mirror, and see just what we'll see. . . .

Laugh, I was hungry. . . . In the interests of Public Health the audience are requested not to eat peanuts. . . . No Cracks.

So Long Public! I kiss my foot in salutation to you.

How am I doing?

POG.

The Journal of the Association of Cine-Technicians

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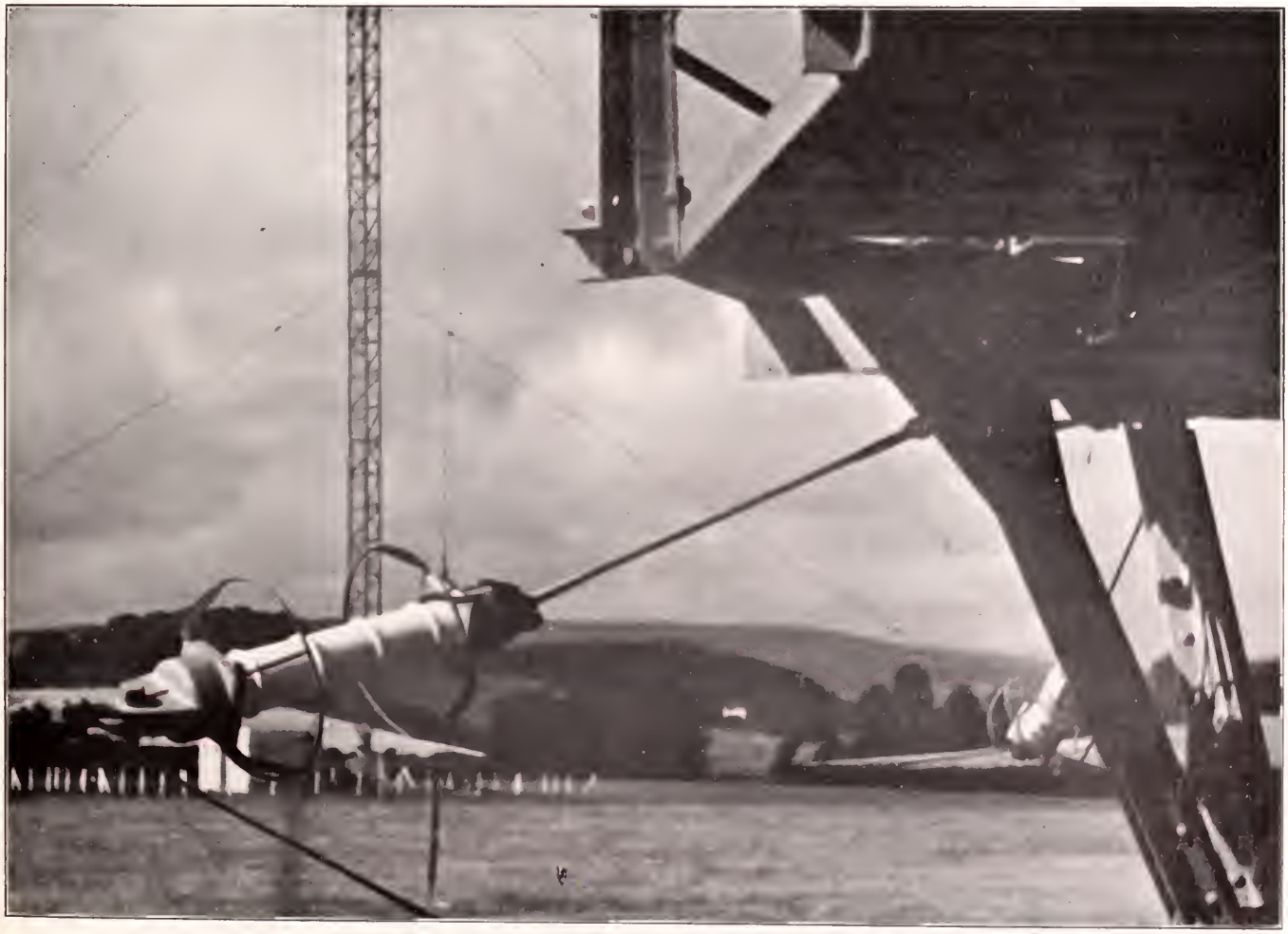
Realist Films

By STUART LEGG

Mr. Legg is a member of Associated Realist Film Producers, a group of directors interested in expanding the field of 'real life' films. A.R.F.P. is affiliated to the A.C.T. This article outlines the development and aims of this branch of production.

The ancestor of the realist film was the interest short. The function of the interest short was to pad out the programme as pleasantly as possible. For this purpose it concerned itself with pretty things; it took you to famous beauty spots, it showed you the quaint and the out-of-the-ordinary. But it was essentially a postcard technique. It sought to reproduce what lay before the camera, with fidelity and an emphasis on the picturesque. Because it approached its material passively, it never took on film shape; because it concerned itself with unimportant subjects, it never presented important issues. It achieved a standard of photography and assembling consistent with the demands made on it, and then went into a decline.



"B.B.C.: THE VOICE OF BRITAIN."

"NIGHT MAIL."

Interest, even picturesque interest, could no longer hold audiences accustomed to the rapidly advancing standards of movie.

But the interest short served its purpose as a pointer to the future. If the technical emphasis could be shifted from reproduction to a creative use of the camera ; if the beauty spots could be replaced by matters of primary importance in the modern world, then the old corpse might take on a new and vivid life, and might even become a medium of contemporary interpretation. On this foundation the realist approach was built.

The realist director believes that cinema, in its search for the material of entertainment, has overlooked a vast and rich field—the field of creative treatment of everyday events. He believes that if you take observed fact as it is, without adding invented frills, and apply the technical devices of movie to shape that fact into film form, then you can bring to the screen not only a piece of good film, but drama rendered more dramatic by its authoritative stamp of truth. He believes that in the everyday working world—the factories, the offices, the homes—there lies the material for a direct and vivid presentation of the complexities and the problems of the community. Books and newspapers can describe, document, infer ; economists can theorise about money, goods and services ; politicians can preach and distort : but movie, by bringing to the screen the people and the things behind the printed and the spoken word, can present the fact. And because film is a creative medium, can present it with dramatic power.

To change these beliefs from theory to practice demanded time for experiment in addition to finance and production facilities. To seek backing for production on any sizeable or semi-permanent scale within the industry was idle. Initial efforts were likely to be of a trial and error kind, and output slow and small. From the trade viewpoint the thing was an unimportant gamble, at any rate until it had proved its case : from the directors' viewpoint the bustle of the studios was ill-suited to the close analysis of movie which the first stages demanded.

The field of propaganda provided the solution. In the description and dramatisation of the people and processes behind the surface familiarities of everyday life—the gasholders, the petrol pumps, the telephone poles—the director obtained close contact with the daily work of industry and the social and economic backgrounds connected with it. At the same time the realist film offered the publicity officer a new method of public information concerning the work and the problems of his organisation. It gave him a new and powerful instrument of public address. In making this alliance, the realist directors made one condition—that they should have complete creative freedom in the handling of their subjects within a given theme. The reservation was an essential one, since an early sowing of the seeds of 'flattery in return for finance' would have reduced the realist film to impotence at the outset. In effect, the securing of creative freedom released the propaganda film from an advertising approach. It allowed the film itself to be the primary consideration. It replaced ballyhoo by exposition, and through exposition led to drama and even poetry. It made possible the extension of the central theme to outside material, thus opening up the perspectives behind the subject. It even allowed of a critical approach to the subject itself.

The Empire Marketing Board gave the realists a starting nucleus, and the E.M.B. Film Unit under John Grierson, produced among other films, "Drifters," "Industrial Britain," "The Country Comes to Town," and "Aero Engine." In 1934 when the Board was disbanded, the Post Office took over the Film Unit. Since that date the use of the realist film as a means of public information and address has steadily expanded.

The Ministries of Agriculture and Labour, the B.B.C., Imperial Airways, the Ceylon Tea Propaganda Board, the British Commercial Gas Association, the Orient Line and many other public concerns have made films to show something of their work and organisation in a vivid and dramatic way. And each different subject brings up new problems of approach according to the nature of its material.

In the early E.M.B. days the film material lay in the products of home industry and overseas agriculture ; the problem was to relate them in terms of description of processes and events. Filming the Post Office involves bringing to the screen some idea of the complex and accurate organisation behind a world-wide communication system. The problem there is to show 'how things are done' rather than 'what is done.'

"AIR POST."

At the same time, the increasing range of subject calls for new forms of presentation. The material of Ceylon allowed Wright to develop a lyrical and poetic treatment in "Song of Ceylon." The slums of Stepney and West Ham offered Elton and Anstey scope for a journalistic 'direct interview' approach in "Housing Problems." "Shipyard" allowed Rotha to apply an impressionist method to the building of a great liner. The last sequence of "Night Mail" allowed Watt to try out a close collaboration between director, musician and poet.

As the field enlarges, these and other treatments are tried out and, if successful, incorporated in the stock-in-trade methods of bringing reality to the screen. The problem of presentation is the realist director's central problem; he must drag order from the chaos of material before him and present it clearly and dramatically. Faced with an apparently impossible subject, it is his business to observe and penetrate until he strikes the aspect and the treatment which will best bring it alive excitingly on the screen. In this sense realist films form an excellent training ground for directors.

The realists have many times been told, sympathetically but firmly, that their films are not box-office ; that though they may interest the technicians and the special audience, they are too highbrow for general consumption. The realist film does not set out to be highbrow ; its aim is the cold-blooded presentation of information ; its means, the dramatisation of fact. If it happens to spark over into something which may be called art, however primitive, it does so because the nature of subject and material spontaneously allow it. If art is to be made an offence, let the newsreels beware. Paramount's shooting of the *Queen Mary* could hardly be called anything else.

The realist also asserts that his films are box-office. In the early days "Drifters" and "Industrial Britain," and more recently, "Contact," "Weather Forecast," "B.B.C. The Voice of Britain" and "Night Mail" have all done well in the theatres. But the theatres represent the realist's show-case, and he only attempts to place his more spectacular goods therein. The B.B.C. film could hardly fail to attract because of the universal interest of its subject. Similarly the appeal of "Night Mail" was practically certain since its subject was rooted in schoolboy instincts. Films of this kind are designed as show-case products. But the majority of realist films are never intended for theatrical showing, and in fact never go to the theatres. These films, destined for non-theatrical showing in the schools, the social clubs, the institutes up and down the country, are not specialised films. They try to appeal to the cinema-going public, but to that public in a different mood. If they succeed, they have done their job as well as the more ambitious theatre film.

Letters After Their Names

George H. Elvin has recently been elected an Associate of The Chartered Institute of Secretaries, the only body authorised by Royal Charter to grant certificates of qualification to secretaries, and the ruling body of the secretarial profession.

Lewis Protheroe and T. S. Lyndon-Haynes have been elected Associates of the Royal Photographic Society.

We are sure that members will wish to join with us in congratulating our Secretary and two of our members in obtaining these professional qualifications.

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Density Measurements of Release Prints

CLIFTON CUTTLE
(Kodak Research Laboratories)

As a part of the program of the Projection Screen Brightness Committee, [1]a number of density measurements of current release prints have been made. The purpose in the making of these measurements has been to supply data for the use of the Committee in its efforts to formulate a proposal for a standard of brightness. For this purpose, the data which appear to be significant are measurements of maxima and minima in density, average or total frame density, and density of the areas of principal interest. This latter density which has been named "Face Value" by Palmer[2] will henceforth be referred to as "F" density.

Apparatus and Data.

Two distinct pieces of apparatus have been used in this work. Sensitometric interpretation of the data requires that maximum and minimum densities shall be determined with a standard diffuse densiometer. From such statistical data, it should be possible to answer the question of how much of the positive characteristic is being used by the laboratories in making release prints. From a knowledge of this fact, it will be possible to state definitely to what degree the laboratory can accommodate its product to the needs of the theatre.

Use of the data by those dealing with the problem of screen brightness, from the point of view of physiological optics, requires that maximum, minimum, average, and "F" density values be determined under conditions which are effective in the theatre.

For the first requisite, a standard Eastman circular wedge densitometer has been used. For the second set of values, a special "densitometer" shown in Figure 1 has been set up. In this instrument, an optical system commonly used in theatre projection has been copied as closely as possible. The dimensional data for the set-up are given on the figure.

A concentrated filament light-source was substituted for the arc lamp customarily used in the theatre, because of the difficulties of density measurement with an arc. For convenience, the throw was shortened and the film-to-objective distance increased. The actual dimensions of the projected picture were reduced to 2′ × 2′ 8 1/2″. In the plane of the projected image, a barrier-type photocell is located. The cell is movable in this plane so that any area of the picture can be selected for measurement. The sensitive area of the cell was diaphragmed to a 7/16 inch circular opening. Since the image magnification is about 40, the measured area corresponds to a circle of about 0.01 inch diameter on the film. Readings from a second cell so located that it can be placed over the lens to measure the total flux in the beam with and without the film in place is used to obtain the total density values.

To provide a measurable image intensity without burning the film in the gate, required the insertion of a piece of

TABLE I.

Typical set of observations on miscellaneous release prints.

Scene Number.	Classification.	D_{max} Diffuse.	D_{max} Projection.	D_{min} Diffuse.	D_{min} Projection.	Maximum Contrast Projection.	Face Density Projection.	Average Density Projection.
1	ICU	1·84	2·45	0·20	0·26	2·19	0·52	1·23
2	ILS	1·72	2·16	0·17	0·30	1·86	0·57	1·02
3	ES-CU	1·52	2·09	0·50	0·71	1·38	—	1·23
4	ICU	1·45	1·97	0·45	0·52	1·45	0·81	1·13
*5	ECU	1·86	2·54	0·78	0·95	1·59	1·08	1·68
6	IS-CU	2·09	2·65	0·65	0·76	1·89	1·19	1·28
7	ES-CU	2·10	2·65	0·35	0·41	2·24	1·40	1·90
8	ES-CU	1·50	1·90	0·30	0·39	1·51	1·06	0·67
9	ILS	1·65	2·18	0·17	0·22	1·96	1·29	1·57
10	IS-CU	1·72	2·22	0·52	0·60	1·62	0·75	1·33
11	IS-CU	2·02	2·64	0·15	0·18	2·46	0·94	0·99
12	IS-CU	1·66	2·14	0·20	0·26	1·88	0·62	1·18
13	IS-CU	1·63	2·21	0·30	0·44	1·77	0·68	1·00
*14	ELS	1·72	2·34	0·40	0·60	1·74	—	1·36
15	IS-CU	1·52	2·15	0·30	0·30	1·76	0·71	0·95
16	IS-CU	1·53	2·04	0·23	0·35	1·69	0·81	0·87
17	ICU	1·66	2·04	0·30	0·36	1·68	0·95	1·00
18	ICU	1·74	2·28	0·20	0·22	2·06	0·43	0·94
19	Title	1·55	2·11	0·18	0·27	1·84	—	1·13
20	ICU	1·50	2·04	0·36	0·64	1·40	0·75	0·88
*21	ILS	2·10	2·57	0·50	1·05	1·52	1·40	1·64
22	ILS	1·70	2·30	0·35	0·43	1·87	—	1·66
23	ICU	2·10	2·52	0·45	0·52	2·00	1·60	1·16
24	IS-CU	1·52	2·10	0·30	0·37	1·73	0·95	1·09
25	ELS	1·72	2·22	0·25	0·40	1·82	0·57	0·95
26	ICU	1·65	2·27	0·55	0·75	1·52	0·78	1·28
27	ICU	1·72	2·19	0·20	0·29	1·90	0·58	0·91
28	ICU	1·48	2·30	0·78	1·03	1·27	0·51	0·80
29	ICU	1·94	2·54	0·20	0·23	2·31	0·71	0·94
30	IS-CU	1·58	2·04	0·28	0·48	1·56	0·93	0·85

*Night Scenes (see opposite page).

heat-absorbing glass between the condenser and gate. Both this glass and the film itself are cooled by streams of air supplied by two properly located fish-tail nozzles.

While it is unfortunate that theatre projection conditions cannot be exactly duplicated in this set-up, the author feels confident that the modifications described above introduce no considerable error into the density measurements.

A list of all of the results obtained in this experiment would be too voluminous to justify printing in the Journal. However, a typical page of data is shown in Table I. The columns, with the exception of the second, need no comment. In the second column an attempt has been made to classify each scene according to its type, "Close up" (CU), "Semi-close up" (S-CU), or long shot (LS). Each scene has also been designated as "Exterior" (E) or "Interior" (I). Items 5, 14, and 21, which are night scenes, have been marked with an asterisk.

It was at first thought that some correlation might be found between the scene type and its optical characteristic.

TABLE II.

Summary of data regarding release print measurements.

	Diffuse.	Projection.
Highest D_{max} measured, ...	2·46	3·2
Lowest D_{min} measured, ...	0·15	0·19
Highest D_{av} measured, ...	—	1·90
Lowest D_{av} measured, ...	—	0·67
Highest D_F measured, ...	—	1·60
Lowest D_F measured, ...	—	0·60
Highest Contrast Scene, ...	—	2·45
Lowest Contrast Scene, ...	—	1·38
Average D_{max}	1·85	2·4
Average D_{min}	0·33	0·43
Average D_{av}	—	1·15
Average D_F	—	0·99
Average Contrast, ...	1·44	1·87

If any exists it has not yet been uncovered.

In Table II. an attempt has been made to give the salient points regarding all of the data.

In dealing with statistical data of this nature, graphical presentation offers a ready means of getting a composite picture of results. A few of the possibilities are illustrated in Figure 2, in which the projection density values of D_{min}, $D_{average}$, D_{max}, and D_F are shown as a function of the frequency with which the various values occur.

Discussion.

An analysis of the significance of these data is beyond the scope of this report. A few general statements concerning the sensitometric interpretation are, however, of some interest.

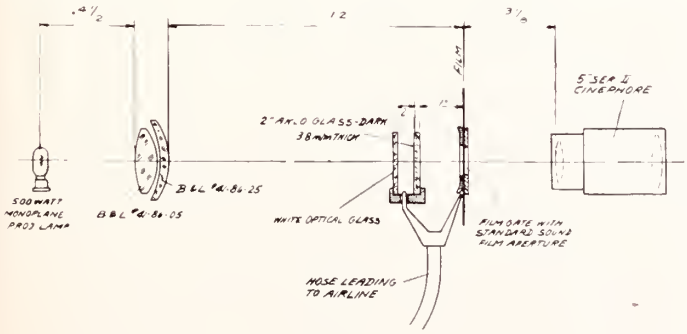

Fig. 1.

Optical system used in making projection density measurements.

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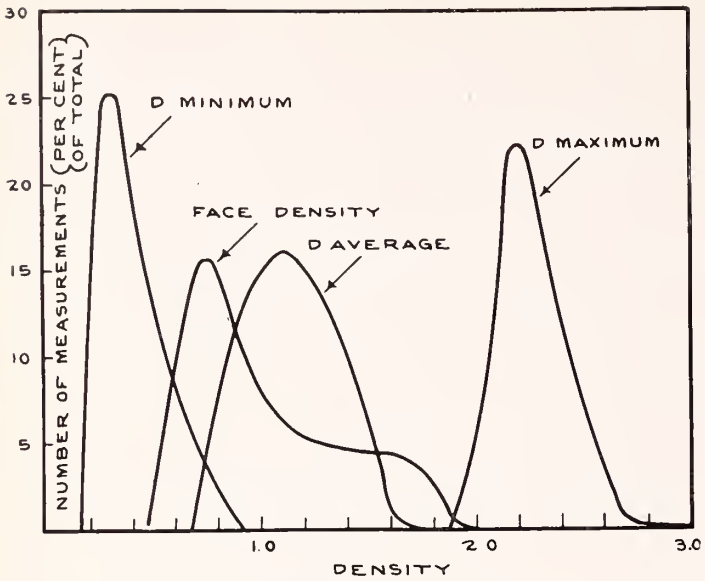

Fig. 2.

Frequency-distribution of projection density measurements.

There is a remarkable absence of scattered light or flare in the projection optical system. This is evidenced by the constancy of the ratio between diffuse and projection density values. If an appreciable amount of scattered light were present, the high print density values as measured in the projection system would be decreased. Actually, the ratio of diffuse to projection density is about 1·3 for the whole range of values. The exceptions are almost certainly caused by experimental error which results from the difficulty of locating identical scene areas in both densitometers.

Figure 3 shows as a solid line, a typical characteristic curve for a positive emulsion developed to a diffuse gamma

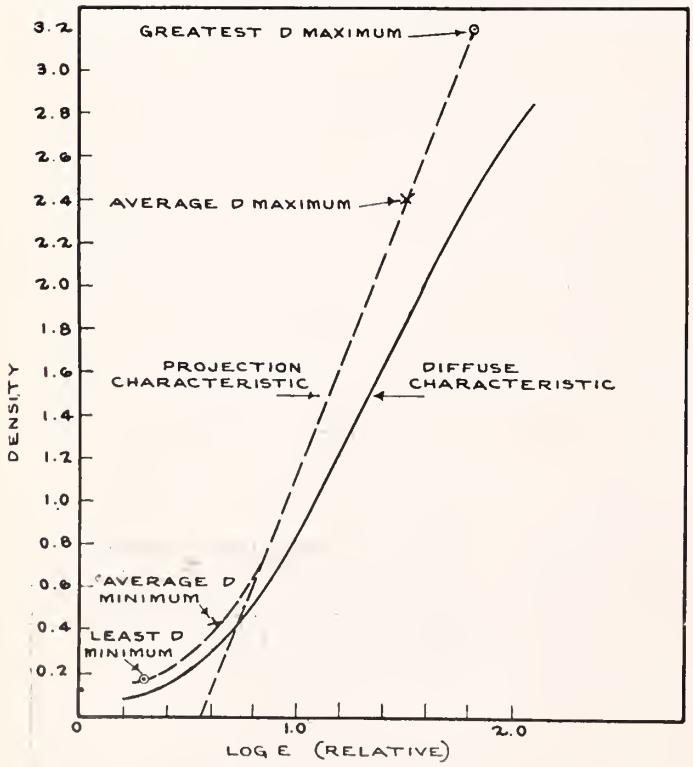

Fig. 3.

The characteristic curve used in the making of release prints.

of approximately 2·0, the gamma to which sound pictures are developed by the laboratories[3]. The picture projection characteristic corresponding to this diffuse characteristic is shown by the dotted lines.

Taking the data from Table II., one finds that that portion of the positive characteristic identified by crosses, i.e., from 0.43 to 2.4, is used for the average release print. The extreme minimum of the data so far at hand is 0·19 and the extreme maximum is 3·20. These values are marked by circles. On the average, then, it appears that release prints use all of the lower straight-line portion of the characteristic curve and a part of the toe region. In extreme cases picture highlight densities approximate the minimum obtainable with any gradient.

It is obvious that while the laboratories have ample opportunity to make darker prints without going into the shoulder region, nothing can be done to make them lighter without seriously altering tone reproduction. A substantiating proof of this is the fact that in no case does the "face value" drop appreciably into the toe region. The average value is close to unity.

The author wishes to thank various members of the Projection Screen Brightness Committee who have supplied samples from current release prints and the Bausch and Lomb Optical Company who have supplied what is believed to be a typical projection optical system.

REFERENCES.

1. Report of the Projection Screen Brightness Committee. *Jour. Soc. Mot. Pict.*, Eng. 25, 1935, p. 269.
2. Palmer, M. W., and Richards, A. J. A Proposed New Method of "Timing" Negatives. *Jour. Soc. Mot. Pict.*, Eng. 15, 1930, p. 181.
3. *Academy Research Council Technical Bulletin*, July 27, 1935.

A.C.T. Technical Abstracts

As mentioned in the Annual Report of the Association, the General Council has always regarded it as one of the principal duties of the Association to do everything within its power to advance the technical ability of its members, and it was reported that a Technical Research Committee would be appointed.

That Committee is now functioning, and part of its regular work will be to issue monthly Technical Abstracts, in order to keep members abreast of technical developments within the film industry. The first two numbers of Technical Abstracts have now been issued.

At present, owing to the large number of organisations, manufacturers and publications in the film producing countries, it is practically impossible for any one technician to keep in touch with modern developments and progress. The Council, therefore, hopes through this new activity to be able, to a large extent, to do this work on behalf of its members and communicate important developments to them.

In the opinion of the Association, the British Film Industry can only continue to grow if the technicians responsible for production keep abreast of modern developments.

There will be no charge for A.C.T. Technical Abstracts, but owing to the expense of production the General Council feels it necessary to gauge the demand for this activity, and future issues of the Abstracts will only be sent to member-subscribers to *The Journal of The Association of Cine-Technicians*, the cost for which is 2/6d per annum, post free.

And Still They Come

READERS will remember that a deputation from the Association was received by the Ministry of Labour on March 19th, as was reported in the last issue of the *Journal*. That deputation outlined the Association's attitude to foreign technicians, as one of non-opposition to the admission of genuine "aces," provided that they did not deprive British technicians of employment or work under less favourable conditions and salaries, and that their crews were entirely British. The deputation also stressed the importance of training and promoting promising younger technicians. During a long discussion the Ministry declared that the employment of foreign technicians in the industry was being reviewed. The deputation said they would be glad to approach the Ministry again in six months' time, after experience of any changes that had been made.

Since then the General Council has been conscious of a growing expression of dissatisfaction among members, in consequence of which it asked the Ministry to receive the second deputation earlier than had been suggested. This was agreed and the meeting took place on Wednesday, July 15th, with the Association again represented by Sidney Cole, Desmond Dickinson, Alan Lawson and George Elvin. There follows a summary of the memorandum presented.

Summary of Memorandum.

(1) The Association is pleased to record the courtesy extended to it by the Ministry when representations are made against the employment of particular foreigners. We feel that the information we have been able to give the Ministry on such occasions, which have been more frequent than in the past, has been of assistance to them in making their decisions. While certain applications have not been granted, the Association is of the opinion that the labour position as a whole has not improved since the previous deputation. There are more foreign technicians in the British film industry to-day than at any previous time. During the past few months unemployment amongst British technicians has been very heavy, and at one period in May 150 were unemployed. Increased production during the past month has absorbed some of these, but there are still competent British technicians available in all departments. **There is a strong growing feeling amongst British technicians that the question of the importation of Foreign Technicians is one of the most serious they have to consider in their professional lives. They see more and more avenues of future advancement closing to them as a result of the granting of so many permits.**

(2) **A.C.T. sees no reason at all why Foreign Technicians who are other than first-class be employed in the British Film Industry on any conditions whatsoever.** Examples were quoted of permits being granted to foreigners to work in junior positions. *The deputation were told that enquiries would be made, but that considerations other than those of employment had to be given weight in deciding the granting of such permits.*

(3) **Undue emphasis given to the sometimes high salaries of Foreign Technicians.** It was suggested that *at least 40% of any such salary should be discounted* in making any comparison with native technicians. The foreign technician would tend to demand a higher salary than he received in his own country because he would take into account the general risks of transference, and the differences of Income Tax and cost of living.

(4) Attention was drawn to a particular studio, used by a number of companies, where **not a single key position is held by a British technician, except in sound.**

The names of eleven foreign lighting cameramen employed there were quoted. At the time some of these were applying for permits the names of several first-class British cameramen who were available were supplied to the studio. But despite apparent prospects, **not one British cameraman has been employed.** While A.C.T. welcomed the occasional genuine "ace," it felt strongly that an excess even of good foreign technicians is bad where it results in (*a*) the unemployment of proved British technicians, and (*b*) stifles the advancement of the most promising juniors, upon whom the future of the British film industry technically depends. **It is proportion that is lacking.**

The deputation expressed its conviction that **there was no justification whatever for the admission of any further Foreign technicians**

(*a*) **to this particular Studio,** and
(*b*) **to any other Company or Studio while the present position at that studio continued.**

In short, A.C.T. was of the opinion that even bearing in mind the possible good real foreign "aces" might do the British film industry, **saturation point had been reached.**

The position at this studio had led many of our members to enquire whether it received preferential treatment in the matter of labour permits. *To this suggestion the Ministry gave a categorical denial.*

(5) Attention was drawn to the case, at the same studio, of **an entire camera unit, from lighting expert to clapper-boy, being foreign.** The Ministry promised investigation. A.C.T. re-asserted, in this connection, *the principle of the entire British crew*, and suggested *that a training clause should invariably be insisted upon even in short-term permits.* It also emphasised the paramount importance of the promotion of promising juniors. There are, for example, several camera-operatives who have had some experience as lighting cameramen, and who could perform this work satisfactorily if they were given the opportunity. In other industries, when a particular craftsman is not available, it generally happens that the next best available craftsman in the country is employed. This policy, however, is not generally followed in the film industry owing to the prevalent importation of foreign technicians, and while this is so the opportunity for British technicians to be employed on the most important productions becomes increasingly rare.

Two or three times recently the Association has been asked by members to check up on certain foreign technicians whose names, upon enquiry, have proved to be unknown to the authorities. Unless our members' information is at fault, this means that such persons are em-

(*Continued on page* 41)

"Cinema Log"

By Kenneth Gordon

Care of Modern Lenses.

Interesting fact gleaned from the International Technical Glass Congress, which was held in London and Sheffield, dealing with optical glasses now being made in England, is that the newer glasses are prone to more ills than the older crowns and flints.

DEUSE BARIUM crown glass, which is used for the construction of modern high-class wide aperture lenses, is very difficult to manufacture in such a way that it is entirely free from colour and bubbles. It is liable to tarnish on account of its chemical composition. Lenses should be kept in a dry place, free from dust, and be capped at both ends. They should be cleaned on an old linen handkerchief which has been frequently washed. If these precautions are observed there should be no fear that damage will occur to the fragile glass components of our modern cine lenses.

Mr. John Maxwell's Resignation.

Regret Mr. John Maxwell's resignation from the F.B.I. If his dissatisfaction with the quota demands of the Federation are beneficial to the film industry, in which he has such a large interest, he surely should have stayed to fight his case and attempt to convince the majority of members by his forcible personality, backed with facts and figures.

Developer for Miniature Negatives.

The still-worker will be interested in a new chemical manufactured by the house of Johnson, under the name of "MERITOL," which has a definite advantage over other agents in the production of negatives of the finest possible grade. A number of our members are using Leica cameras to produce publicity stills and this developer gives beautiful negatives from 14 mins. in the case of Kodak Panatomic, 28 mins. Kodak Supersensitive Pan, and 32 mins. Agfa Isopan.

It is necessary, in all cases, to give full exposure, but no increase is necessary above common practice. The solution can be used at a temperature of 65 degrees F., and although it is not essential it is advisable to use distilled water in the making of the solution. Shortly after mixing, the solution turns to a clear, bright yellow, which gradually deepens on exposure to the air. In spite of this, the developer may be used repeatedly and will keep well if stored in well corked bottles.

Negatives obtained by this developer have many of the characteristics of physical development, being brown or warm black by transmitted light and cream by reflected light, and enlargements of 20 diameters or even more may be obtained without noticeable grain.

It is advisable to wash the negatives for a minute or two between development and fixing, and to keep the fixing bath at approximately the same temperature as the developer. An acid fixing bath is preferable and great care should be taken to keep the negative free from dust during the drying.

It's to be Elstree.

Now that the Denham thunder has died down it is interesting to note the progress that is being made "down Elstree way." Joe Rock, supported by J. H. Iles of Margate fame, is building five stages, two of which are nearing completion. The Amalgamated lot will open in September. This will be, it is claimed, the finest independent studio in the world, and the lighting is the last word in modern progress.

Rumour has it that the B. & D. lot will be rebuilt by Herbert Wilcox Productions. And Tudor Films will build some stages close by. No definite word yet when B.I.P. will reconstruct their old stages.

Filming in the Shetland Isles.

News from John Behr of the Joe Rock Camera crew, now filming "THE EDGE OF THE WORLD," under the direction of Michael Powell in those rugged Northern Isles.

They sailed from Sunderland in the Wear Pilot Cutter "VEDRA," which has been chartered by the film company to act as depot ship. She is a fine vessel, noted for her rolling, so pity the poor technicians.

The good ship is loaded with camera and sound equipment, props and housing for the artists and staff ashore. They arrived at the Island of FOULA, seventy miles north of the Orkneys, with a thick fog and a heavy sea running. The gear had to be landed in small boats—a very ticklish job. By the way, it's "cameraman and sailor too" on this job. They all take watches during the various voyages and the camera crew steered the ship through a fleet of herring drifts. The practice they have had "dollying" has come in very useful.

The light in these northern parts, says John, is excellent, the night only being of one hour's duration. The unit is living ashore in huts, with one hutment for messing. There is only one shop on the island and strong drink is only taken by the inhabitants two or three days a year, at the New Year festival. They say that what strikes you about the island is that there are no bricks, trees or beer—all very annoying! If you should be thirsty, drinking water is situated a quarter of a mile from the huts.

They have had some very good shooting weather and some excellent shots have been obtained. The island of FOULA has the highest cliffs in the British Isles, and the sea around is very dangerous, the scenery wild in the extreme.

Hard work has to be put in getting the cameras and a sound gear to the various points for exteriors. The unit expects to be on the island for two or three months, and has been marooned for several days from the main land owing to the very rough weather.

Press Photographers Organise.

Fleet Street has just held a meeting which was very well attended and formed the British Press Photographers Association, under the chairmanship of Billy Horton of the *Times*. A very strong committee has been elected, representing Newspaper Staff, Agency and Free Lance Photographers. Rules are being drawn up and it is hoped a joint meeting with be held with our Newsreel Section who have so much in common with their Press colleagues.

And Still They Come (*continued from page* 39)

ployed here illegally and without permits. If this is so, the undesirability of their presence here ceases to be a matter of opinion but a fact for the law to take notice of.

It is difficult for the Ministry of Labour to keep track of such a situation, except through such information as A.C.T., or other interested bodies, are able to give them. We would venture the suggestion that a system of inspectors appointed by the Ministry to visit studios might prevent such illegal working in the future, even if it has not already occurred.

It is, of course, essential to have a positive as well as a negative approach to this problem. It is not enough to oppose entries, or even to arrange, where necessary, for questions to be asked in the House of Commons. We must develop and extend those activities which are aimed at maintaining and improving the technical ability of British technicians—film shows, lectures, Research Bulletin. We must publicise the British technician and his work, so that increased regard will spur him to do even better. It is true that clever photography, ingenious cutting, or good recording are sometimes buried in productions that never have occasion to blush under West-end neon signs, and that so escape the notice of the critics and even of the industry; but a list could be compiled of good films made by 100%, or nearly 100% British units, that would surprise some of those who hardly seem to realise that British technicians exist at all. We must make certain companies a little more conscious than they are now of the existence of British technical skill. For, after all, it is against the companies that employ an excess of foreign technicians that our complaint ultimately lies, not against foreign technicians as individuals. If we cannot appeal to them on patriotic grounds we may at least impress them through such publicity with facts about British technicians of which they appear to be ignorant.

Finally, let us recall part of a motion unanimously passed at the Annual General Meeting on May 10th :—

> "A.C.T. is of the opinion that conditions in this country pertaining to the employment of foreign technicians should be no less rigid than elsewhere" (it is virtually impossible for a British technician to obtain employment in the film industries of U.S.A., France or Germany) "but emphasise that at any time it would be prepared to consider proposals from the corresponding body of any other country for employment of their respective members in each country on a reciprocal basis."

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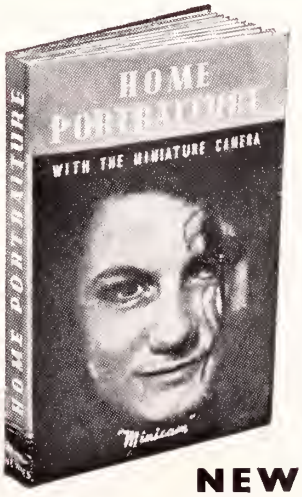

THE first really complete and authoritative work on miniature portraiture, by a well-known expert and regular contributor to the "Home Photographer." The author discusses the subject from A to Z, beginning with the home studio, its lighting equipment, background, reflectors, etc. Going on to the camera equipment and the actual taking of the portrait under varying lighting circumstances, indoor and outdoor, child photography and informal portraiture, he outlines the principles of composition, developing and printing. The work is copiously illustrated with pictures and diagrams.

Note: "Minicam" is a recognised authority his work is followed by camera enthusiasts everywhere and his book will be eagerly read by everyone connected with the kindred science of cinematography.

NEWNES : LONDON

The Director's Right Hand

By Leigh Aman

THE task of an Assistant Director is to be fully informed as to all details of a production and to pass on the necessary information to those engaged on the picture. He is, unfortunately, too often considered by other departments to be a necessary evil who must be taken, like a dose of medicine, with, say, a particularly popular director. Their idea is that he is either too lazy, or else incapable of taking the trouble even to keep himself informed of these details.

It is to be regretted that, in some studios, the Assistant Director's job has become purely mechanical, which prevents any initiative on his part. In fact, he sometimes does not see the script until the day shooting begins. This makes efficiency in his work virtually impossible as he cannot know all the details contained in the script. It is, therefore, almost essential that the Assistant should work from the beginning of the story, attending all the various conferences with the director and writer. This I can corroborate from experience, for I have had the opportunity of sampling both methods. On one production, when the script was written while the picture was being shot, I discovered towards the end that several sets had been put in without my knowledge. This was the director's first film and he had, presumably, forgotten to mention this addition to the story. In consequence there was no set built, no furniture for dressing it and no artist cast to act in it. It is hardly necessary to say who was blamed for the resulting serious delay!

The first and most important quality necessary for an efficient Assistant is *tact*. The Assistant Director should act as a kind of "Buffer State," for often when there is friction between the various departments on the floor, he is the sole means of removing it. He must therefore be pleasant to both sides and, if he cannot make them both believe they were in the right, then he must at least evolve some sort of compromise. Friction is often caused by the necessity of completing a Daily Progress report. This is obviously essential for preserving details of footage, screen time, salaries, etc., but when, as is sometimes the case, all delays have to be entered up, the technical departments frequently disagree as to their exact cause.

Tact is also necessary when dealing with artists. For instance, the director sometimes writes additional sequences on the floor. The artist has stated in his contract that he must have the script at least a week before shooting begins, in order to learn it. It is the Assistant Director's job to smooth out the resulting difference.

In calling the artists for the next day's work, he should make a special point of stating the approximate time they are required on the set. This is important, as it is almost impossible for the director to work with tired, disgruntled artists—and they are inclined (quite rightly) to become so if called at eight in the morning and not used till after tea.

I have said enough to show that by far the most important quality in an Assistant is tact. But this is not enough. He should have a better memory than anyone else on the unit, including even the continuity girl—if such a thing is possible. He must not only remember sufficient for her to be able to check with him in case of doubt over some point, but also he should memorise the progress of every department, including camera and sound footage, finance, schedule, etc. This brings me to an important practical issue—the schedule. On most pictures the financial allowance is naturally kept to a minimum. So when a director cannot or will not work quickly, or if one has difficult artists, or a large crowd, or any of the hundred-and-one "technical hitches"—the picture may easily run over schedule. This, of course, means extra expense in studio rental, overtime, etc., for which again the Assistant is blamed.

Here we approach another vital aspect—in fact one of the reasons for the existence of A.C.T.—overtime. With the exception of crowd artists, this of course only applies to members of the older established unions. A union, unless it has a hundred per cent. membership, is virtually powerless to do anything in this direction. Very few studios, as yet, provide entirely satisfactory conditions for their technicians. Only by organisation can conditions be improved—and only through the A.C.T. can we organise. We must aim at that hundred per cent. mark.

Another factor concerning unions is co-operation. The Assistant Director must co-operate with all the various unions that exist in the industry, for unless they work together, inevitable trouble will result. If, for instance, a unit has been continually breaking just a little late for lunch, say varying from twenty minutes to half an hour each day, there will, in all probability, be no complaint for a week. Now, one night it may be necessary for the unit to work until ten minutes past eight to finish a set which has to come down to make room for another. The electricians having had enough of this lack of consideration, may decide to enforce their rules and break at eight sharp. This means the whole unit must break and up goes the overtime again. All this is quite reasonable and to be expected, for the function of a union is to look after its members. It is for the Assistant to anticipate anything likely to cause difficulties of this nature and to try to prevent them. There must be give and take on all sides and it is his job to balance the scales.

It is, I hope, clear that the Assistant Director has important duties to perform and is not the nuisance he is sometimes considered to be. However, it is certainly not as easy to think of all these details during the rush and panic of a picture as it is to write them down. An efficient Continuity Girl is the Assistant's greatest help. If these two can work together, they will halve each other's worries and so make for a more smoothly running picture.

Finally, a word of warning. The Assistant should refrain from continually badgering the cameraman to find out if he is ready—(as I am afraid some do). This warning adds one more quality—patience—to those which go to make a really valuable Assistant Director.

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British Cartoons in the Making

John Rudkin-Hubbard

" 'STEVE Steps Out,' famous comic-strip character from the *Sunday Express*, makes his bow in animated cartoons scheduled for presentation in Autumn."

Such an announcement as this might be found in any weekly issue of a film journal and little interest taken by the majority of film technicians. Yet this animated cartoon—the first of many—has been produced by people who are part of the film industry and endeavouring to put before British audiences entertainment in a sphere that up till now has been monopolised by America.

Apart from Mr. Anson Dyer's colour cartoons and the work of Publicity Pictures, Wardour Street, in the advertising field, England has neglected the market for cartoons. When one realises the demand for Disney's and Harman-Ising's, it is hard to understand the seemingly prejudiced attitude of sections of Wardour Street to a thriving little section of the industry.

Artistically, production in England has not reached the Disney standard, but as regards box-office attraction it does and will hold its own.

British humour is a brand all its own and the cinema-going public are always sympathetic to honest endeavour. With this in mind, Roland Davies, the creator of the comic-strip character "Come on Steve" has put "Steve" on the screen.

His production unit is in full blast and at the time of writing the third cartoon is in its final stages and the fourth scenario approved and ready for working.

The intricate work that goes to complete a cartoon has been boasted in various places, but a brief description of production methods will at least show that British cartoons will hold their own technically.

The first stage, after the scenario has been approved, is the drafting of the scene and the main character "key" drawings. This is done by Roland Davies. Suffice it to say that these still drawings are remarkably funny and with these in hand the animator sets blithely to work to make them come to life, walk, talk and strut for your amusement.

Leaving the animator's desk the complete set of drawings representing a scene are then traced on to celluloid by the special tracing staff. This ensures an evenness and delicacy of outline throughout. When so much depends on the correct interpretation of the animator's work, and a thickened line can alter an expression, tracing becomes a highly skilled department in cartoons.

Then to the colourists, whose work is obvious, but none the less difficult. Each character must be tinted correctly for the whole film and celluloid is not the finest of bases to apply colour to.

All is complete. The work is drawn, animated, traced and coloured. The next step is to photograph the celluloids in their correct sequence over a background designed for that particular scene.

The cameraman has a chart which describes the action of the scene and the time in picture-frames. The celluloids are numbered in relation to this chart, so a final check is made and the scene is shot.

The camera technique is very close to ordinary studio routine. Pans, tracks, dissolves and fades are all part of the day's work and a cartoon cameraman has every reason to pat himself on the back when the film is shot.

The next and final step is to make the sound track for the cartoon. The musical director sees the silent copy and arranges his music accordingly. The "noise" merchants rehearse their effects to the film—then to the recording studio, and the track is made.

Six weeks of careful work and the cartoon is finished and ready for the public.

So look out for "Steve" in the Autumn. He is pretty sure to give you a good laugh.

A.C.T. Winter Programme

To be held at the Crown Theatre

We are pleased to announce that the Winter Programme, 1936-1937, of lectures and film shows, will be held at the Crown Theatre, 86 Wardour Street, W.1., by kind invitation of Mr. Victor M. Gover. Fixtures will be held fortnightly, as last year, film shows and lectures alternating. The programme commences in October.

Members who attended last year's functions give high praise to the general facilities of the Crown Theatre, which is also equipped with private editing bays of particular appeal to the independent producer.

The theatre is equipped with two "Magnet" Sound Projectors, with British Acoustic "Q" type Re-producer, working at 50 watts and giving full range and normal sound reproduction. One machine is fitted with a P.U. Two Sound Head and the other is double-headed, fitted with P.U. Heads. With a throw of 55 ft. a brilliant picture, seven feet by five, is shown on a beaded screen. The "Crown" is one of the largest of the private theatres, having seating accommodation for a hundred persons.

We are very grateful to Mr. Gover, an A.C.T. technician himself, for his continued and invaluable help to the Association.

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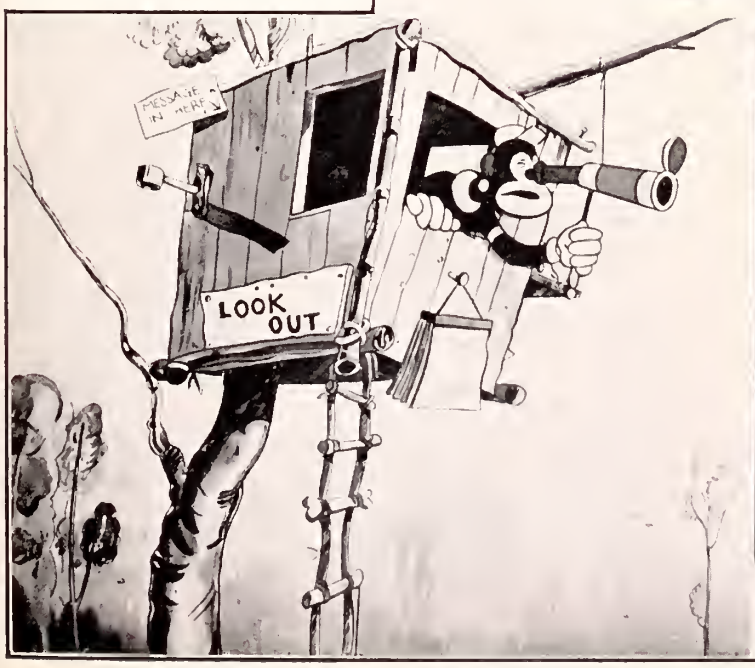
"BRITISH CARTOONS IN THE MAKING"

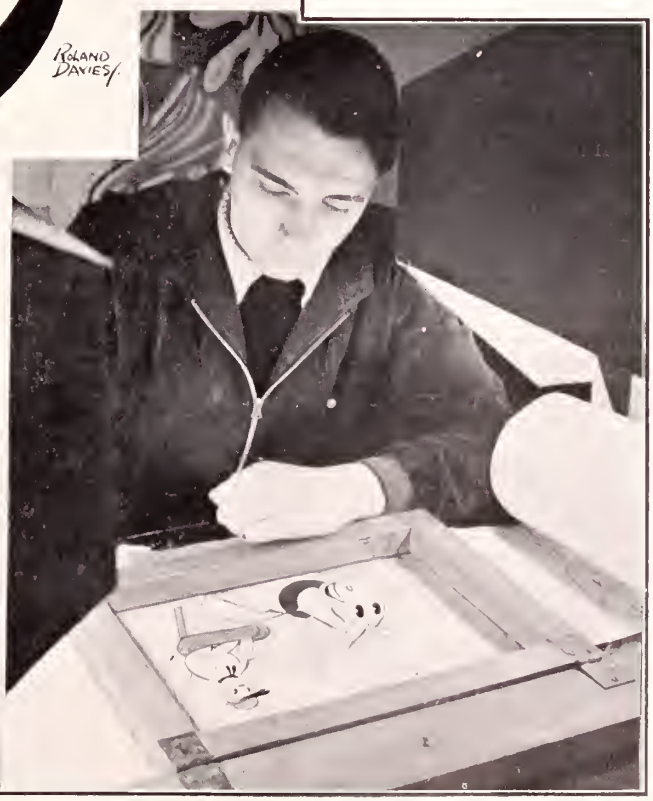
Photographs of Roland Davies Cartoon Films, Ipswich, at work.

CAMERA ROOM. Two Cameras geared to motor which are operated by foot and work alternately.

ROLAND DAVIES (white pullover) talking to member of animating staff.

Still from "Steve of the River."





JOHN RUDKIN-HUBBARD, cameraman, shooting close-ups.

Quota and Quality

It is surprising how much agreement there is between the various sections of the industry that have so far given evidence before the Quota Committee. This Committee was appointed on March 25th, by the Board of Trade, with Lord Moyne as Chairman, "to consider the position of British films, having in mind the approaching expiry of the Cinematograph Films Act, 1927, and to advise whether any, and if so what, measures are still required in the public interest to promote the production, renting and exhibition of such films." Between May 5th and 26th, the Committee took evidence from the Board of Trade itself, and from the Film Producers' Group of the Federation of British Industries, the Associated Realist Film Producers, the Association of Cine-Technicians, and the Cinematograph Exhibitors' Association, in that order. This evidence has now been published, together with the memoranda submitted by these bodies.*

The chief point of agreement that emerges from the report is the necessity for provisions in the next Act to ensure QUALITY. It is agreed that the original Act has done its job of building up a British film industry where there was practically none before, but it has had also the unforeseen result of producing the 'quickie,' a film that does no good to its maker or anybody else. It certainly does no good to the unfortunate British technician who helps to make it. He works long hours under pressure of the necessity to finish the picture quickly, often under bad conditions and with inadequate equipment. And his reward generally has been to find that his work is despised and unfairly contrasted with that of more fortunate foreign technicians who never have to work on this type of picture, but on expensive productions where time and money is allowed for obtaining good results.

A.C.T.'s evidence was briefly as follows :—

Criticisms.

1. *Bad Quality Quota Pictures*—Bad quality pictures have been produced in order to fulfil renters' quota. Most of these pictures were bad simply because no effort had been made to make them otherwise.

2. *Retarding Progress of British Technicians*—The making of 'Quickies' is reflecting detrimentally on the British technician.

3. *Non-Compliance with the Spirit of the Act*—Quotations were given to show that British quota films are sometimes only nominally run in the course of the ordinary cinema programme, but in fact are "run in the morning dust of the theatre, before handing them over to the distribution side to inherit more dust on cellar shelves."

4. *Salaries and Working Conditions*—'Quickies' tend towards low salaries and bad working conditions for the technicians employed on them.

Suggestions.

1. **Expenditure**—(a) *Cost of film*—Pictures of 6,000 feet and over should cost a minimum of £12,000 ; films of less than 6,000 feet should cost a minimum of £2 per foot. Of this, not more than 30% should go to company directors' fees, preliminary expenses, overheads, film directors' fees, story and scenario.

(b) *Salaries*—The clause in the present Act stipulating that 75% of salaries must be British, should apply to technicians only. Manual labour, which is at present included, would be British in any case.

2. **Quota Percentages**—(a) *Renters' Quota*—The existing quota of 20% should be gradually increased to 25%—say to 22½% in 1940, and to 25% in 1942.

(b) *Exhibitors' Quota*—This should be reduced from the existing figure of 20% to half the suggested renters' quota, *i.e.*, to 10% rising to 12½%. These suggestions are made contingent upon the adoption of some such minimum cost as A.C.T. recommended. With reduced exhibitors' quota, renters would have to *sell* their British pictures on a more competitive basis than at present. The manufacture would be encouraged of pictures that would have to sell on their own *merits*. Producers might even find it advisable to spend more than the minimum cost and more time in production, in order to ensure a competitive British picture.

(c) *Films for Specialised Halls*—The New Act should include a clause safeguarding the showing of not normally commercial foreign films. Such films should not come under the same quota regulations as the ordinary commercial film.

(d) *Penalties for Non-Compliance with the Act*—In view of the above suggestions, application of penalties should be more stringent under a new Act. An automatic penalty should be added that both exhibitors and renters who fail to meet their quota obligations, for whatever reason and whatever other penalties are imposed, should have the amount of footage by which they are in default added to their next year's quota footage obligation.

(e) *Cutting of Films After Registration*—Instances were quoted of the alleged practice of certain exhibitors in helping to discredit British films by the manner in which they deleted portions of such films for exhibition after they have been registered at a certain length.

3. **Double Bookings**—There should be safeguards for the exhibitor against the practice by which he may be induced to book, together with the feature he wants, shorts and second features he would not book otherwise. The percentage of the takings apportioned to the feature, and such other films is often no indication of their real respective values.

4. **Documentary Films**—In the new Act, quota should apply to long films and short films separately. Short films should be divided into two categories—(a) Studio films—which can already fulfil quota under the existing act ; and (b) Other than Studio films (which will chiefly be documentary), which should rank for quota provided they show evidence (to be judged by a sub-committee appointed under the Board of Trade) of a pre-conceived creative treatment.

5. **British Dominions**—The new Act should be confined to pictures made in the British Isles, but there might be a reciprocal arrangement, preferably one-to-one, with the Dominions. There have been cases of bad films made in the Empire being registered here merely to count as renters' quota.

6. **Privileged Technicians**—The present Act insists on the scenarist of a picture ranking for quota being British. In practice, this has not been applied rigidly. A.C.T.

* *H.M. Stationery Office*, 9/-.

suggests that the regulation should be that not more than one foreign technician should be employed in any category on any picture ranking for quota.

7. Interpretation of Act—The new Act might usefully carry a glossary of studio and trade terms to help in its application.

The Associated Realist Film Producers, who are affiliated to A.C.T., presented the special case for documentary films, which was supported in its entirety by A.C.T., and was a detailed argument along the lines indicated in 4 above. With this type of film England has achieved international prestige, and its position as "the most creatively and nationally conscious section of British film production" entitled it to special consideration under the Act.

It is interesting in this connection to note from the Board of Trade's own evidence,, that the production of British shorts has steadily declined from 150 in 1929 to 85 in 1936, or from 170,000 feet to 96,000 feet.

This decrease in shorts is given by the C.E.A. as one of the special difficulties the exhibitor has to meet. For the exhibitor, the C.E.A. declares, the margin of selection of quota films is all-important. The present 20% quota "is proving a very severe test." Of 178 British films trade-shown during 1935, the C.E.A. viewers classed 64 as inferior or definitely unshowable. These were the worst type of 'quickie,' produced for meeting renters' quota. This left the exhibitor only 114 films to choose from. Were sufficient good British shorts being made, he could make up his quota requirements from them. But they were not being made and he had to find long British films to offset the lack of them, which increased his actual long quota to about 24%.

The C.E.A. make a suggestion similar to A.C.T.'s, that exhibitors' quota should be reduced to 10%. This, coupled with the fixing of the necessary quota for renters' (which presumably would be 20%), they feel would meet the original intentions of the Film Act, "that there should be a margin of two films from which to select one."

They are not, however, in favour of the cost basis of qualification, as they feel that it would decrease rather than increase production; that £2 per foot is not high enough; while to put it higher would make for an even greater decrease of production, with consequent difficulty to the exhibitor. They would like some standard of quality or exhibition value enforced for quota pictures, to be administered by a committee; but they admitted, in verbal evidence, the administrative and financial difficulties of such a method.

An interesting suggestion to meet partly the abuse of the silent Empire-produced picture, introduced into this country merely to meet renters' quota, is that the new Act should apply by definition to "sound" films only. As they say, "This back door must be closed."

The Film Producers' Group are in agreement here. They make the same suggestion as A.C.T., that Dominion-made films should be available for quota here only on a reciprocal basis. On other points, however, while they agree with other sections of the trade in principle, they diverge widely in the details of their proposals. They agree broadly that the present Act has served its main purpose; that it has led to certain abuses which a new Act should aim to remedy;

(*Continued on page* 48)

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Script Girl

By Toni Roe

When a script girl goes on the floor at the commencement of a production, she is undertaking the responsibility of seeing that in the final version of the film in question there shall be no "continuity" mistakes.

These mistakes are found when the film is cut, if the action or clothing of the artistes or the properties on the sets do not match up from one shot to another—and it is essential for the ultimate smoothness and polish of a good film that they should be avoided.

Hence it has been found necessary to employ a script girl on every film unit, and it is her duty to take copious notes in shorthand during the shooting of a film, checking all details regarding matching and general continuity.

To keep a record of these things, she types her notes out on "Continuity Reports." These report sheets constitute a very large part of her work, and are extremely important, as they are the only written record kept of the exact shooting of the film. From these sheets all other reports, etc., on the progress of the production are based. A copy of these is also sent to the editor every day, to assist him in cutting the film. One sheet is made out for each shot taken, and on it is typed the exact dialogue and corresponding action covered, the camera set-up and lens, the number of takes with the footage of each and which are to be printed, and the screen time of the shot. If there are any special technical details, such as playbacks, back-projection, model shots, or any other form of trick photography, a note of this should also be made. Any special instructions from the director of the film to the editor regarding the cutting are typed on these reports too.

The script girl is definitely attached to the director whilst on the floor, and is there to supply him with any detail he may desire to know regarding what has already been shot, or about any part of the script that has not yet been filmed.

The numbering of the shots is also under the control of the script girl, and she issues the correct number to the clapper boy and Sound Department before every scene is taken. There are many different ways of numbering, but whatever method is employed it is vital that the corresponding script numbers should be typed on the continuity reports for the editor's reference.

A special chart should be kept for all the costumes, and an exact description taken for every artiste at the commencement of each fresh sequence for reference throughout. One soon gets to know the tricky things in costume matching. For instance, it is not really likely that the leading man will completely forget what suit he was wearing in a certain sequence, but it is quite probable that he may not remember whether he had a handkerchief in his breast pocket, and if so how much it was showing; if he had a gardenia in his buttonhole, or a carnation. Similarly, the leading lady will not forget what evening dress she was wearing very easily, but she might forget her earrings, or any other jewels.

Hairdressing is another thing that must be matched carefully. Do not let the leading lady change her coiffure in the middle of a sequence, or the leading man have a hair cut, or the villain his beard trimmed.

Yet another of the script girl's responsibilities are the matching of the "props"—that is furniture and fittings on the sets. She should get a "set still" of every set at the beginning of each sequence to establish these things, and make diagrams of anything particularly vital.

In urgent cases, where there is some doubt regarding the matching of a shot about to be taken with one already taken some time back, a few frames of the completed shot can always be obtained from the cutting room, and the matching be done by these.

Very often a script girl is employed for a considerable period in the office before the actual shooting of the film begins. During this time she usually helps with the compiling of the script—sometimes typing it, which affords her

(*Continued at foot of next page*)

Quota and Quality (*continued from page* 47)

that quality should be the object of that new Act; and that a cost basis is the simplest method of ensuring quality. The figure suggested is a minimum of £2,500 per 1,000 feet for long films. But they ask for *a steep raising* of the quota percentages to an eventual 35% for renters and 33⅓% for exhibitors. Films costing less than the suggested minimum to carry a title, after the main title and at the end of the picture, saying "This is a *Renters' Quota Film,* acquired by Messrs. . . . to enable them to distribute foreign films." No long film costing less than £4,500 to be eligible for renters' quota at all.

They further ask for the new Act to prevent the showing of pictures during 'dead' hours; to encourage the production of documentary films; to abolish the necessity of the scenarist being a British subject; to increase penalties for non-compliance with quota provisions.

Some of the larger suggestions made by the Film Producers have since been invalidated to some extent by the public statement of Mr. John Maxwell (Chairman of B.I.P.) that he dissociates himself entirely from their proposals and is resigning from the Group.

It is significant and gratifying to see that the facts and figures given by the Board of Trade, substantiate most of the statements of principle and many of the allegations of bad practices made in the various evidence. For example, the figures of quota footage liability as compared with actual footage registered (Table E in the report), which shows how exactly the "foreign-controlled companies" met their obligation, to the nearest thousand—*neither less nor more.* Which should be taken in conjunction with Table F.

Estimated (weighted) Average Marking of Films in 1934.

Registered by	British Films.	Foreign Films.
British Companies,	8	7¼
Foreign Companies,	7	8

(This is, of course, the C.E.A. review marking, based on a maximum of 10).

Sidney Cole.

Passing of a Pioneer

WILL DAY, F.R.P.S., F.R.S.A.

Born London 1873, *died London July* 16th, 1936. *Taught Lantern Projection by his father at nine years of age. Founded Tyler Apparatus Co., Ltd. Director and General Manager* JURY'S KINE SUPPLIES Ltd. *Founded* in 1913 WILL DAY Ltd. *Film Historian and responsible for the Day Collection now in Science Museum, South Kensington.*

Photograph by courtesy of "The Cinema."

AND so our only Trade historian has passed over, and we are left without a recorder. Von Schelegel told us that the historian is a prophet with his face turned backwards. Those who knew Will Day best can vouch for the prophetic fire and zeal he devoted to Film history and its lessons.

No one was more conscious of the infinite potentialities of the moving picture. Your historian is pictured as a dry-as-dust fellow, coldly scientific in his collation of facts, but our beloved Will had never lost that prophetic virtue of always seeing sights and wonders. He was the eternal boy with his sense of wonder undimmed. One memory still remains with me—Will Day showing an enraptured audience at the Polytechnic the first Lumière machine that gave birth to moving pictures on this side. To that audience the simple boyish enthusiasm which he injected into its story was so infectious that it became a new wonder and an authentic thrill. In the true sense Day was a superb showman, because he had never lost his enthusiasm nor his endless sense of curiosity. So dynamic was his platform personality that he once held a Photographic Society's audience spellbound for three hours.

A pioneer himself, it was in 1899 he began to show moving pictures. His father was a magic lantern expert, so cinematography was in the line of succession. For Friese-Greene he always stood sponsor, and it was in his darkest days that the British inventor of cinematography looked to Will Day for the help that was unfailing and loyally given. How far his passion for historical research led him away from the more lucrative side of his business will never be known. But judging by a casual acquaintance with the immense sum he expended on the Will Day Collection, it must have been a long way.

Three years ago he had announced a forthcoming work, "25,000 Years to Trap a Shadow," which was to epitomise the invention of pictured movements from pre-historic cave drawings to the latest development of to-day. Years of colossal industry had gone into the work; thousands of original documents and photographs of historic invention had been collated at enormous expense. It was meant to provide a lasting monument to the Fourth industry. To my mind it will be nothing short of a historic tragedy if that volume is lost to the Industry.

But perhaps it is as the technicians' friend he will be best known to members of the A.C.T., having written a wonderful story in our last issue. None gave more lovingly of his stories or knowledge on technical evolution, nor lavished more attention than he did in imparting even the elementary facts to the humblest of our fellows.

The brethren salute you, Will Day, as you pass on from the Shadows to the Sun.

ROBB LAWSON.

Script Girl (*continued from page* 48)

a very good opportunity for studying it herself. She also makes out, or assists in making out, the "dope sheets," etc., and generally helps with all preparations for shooting. This is very much pleasanter than having a script presented to her only a couple of days before production starts, and going on the floor with no preliminary work to help her at all.

One of the best and most practical ways of doing continuity is to have two girls on the job. The first one to be responsible for the matching, for which she can make her own notes, and to assist the director as much as possible; the second one to do all the typing of the reports and more routine work. It is a pity this method is not adopted more often in British studios, as it has been tried and proved most successful, and definitely makes it easier for the script girl herself, who is, I think everyone must admit, one of the most overburdened figures in the film business.

The post of script girl is the only one open to women on the actual floor, or production staff of a film unit, and is therefore an extremely popular one. It can also be a extraordinarily pleasant one to hold, provided one remembers to keep one's temper, head, sense of humour, and—most important of all, and a point with which I think most script girl's will agree—one remembers that a little bluff, discreetly applied, goes a very long way.

Letters to M.P.'s.

With reference to the recent circular sent out on the subject of foreign technicians, if you wish to write to your particular Member of Parliament about the matter, you may apply to the Secretary for guidance as to the form your letter should take.

If you don't know who your M.P. is, the Secretary can tell you that too.

Enlargement from negative of film showing a shell explosion.

Below shows two A.C.T. members, Harry Waxman, assisted by Arthur Graham, photographing an interesting set-up of a miniature shot across "No Man's Land."

Technical Information

Mitchell Camera, driven with high-speed gear box, at a speed of 120 frames per second. Kodak Super X stock and Cooke Speed Panchro Lens at F/2.

Stills from recent production at Merton Park Studios of Publicity Films Ltd.

Interior and Exterior Studies at Piemonte and Nice, respectively, by DAN COBBE, Scenic, Portrait and Decorative Artist.

Mr. COBBE is a member of A.C.T. and has recently returned to England after 15 years on the Continent.

Opportune Book on Colour Cinematography

Desmond Dickinson Reviews "COLOUR CINEMATOGRAPHY," by Major Adrian Bernard Klein, M.B.E., A.R.P.S.

(Chapman & Hall, 25/- net.)

This book which, so far as I know, is the first book dealing entirely with COLOUR Cinematography, has arrived at just the right time, when the film business is thinking and talking about colour. Had it been published some years ago, many investors who had been shown apparently satisfactory examples of colour cinematography, might not have wasted their money in backing various inventors who were trying to iron out snags which were inherent to their particular process. I am glad to see the author has the courage to say, for example, "It is likely that all the work lavished upon the 'additive' method of synthesis, in which three separate images in the primary colours are projected in superposition upon the screen, was wasted, though for many years this appeared to offer a simple and elegant solution."

It is interesting to see that practically all modern developments in colour photography were originally suggested by M. Louis Ducos du Hauron, who in 1862 described a 'photochromoscope' (an optical instrument for the additive admixture of three primary colour images), additive projection, the mosaic screen process, bipacks and even tripacks; thus he anticipated nearly all subsequent practice. The Academie des Sciences refused to allow the presentation of the paper. Indeed, it was not published until 1897.

It is of further interest to note that the type of colour process which the author suggests will be the ultimate, will be on the lines of M. du Hauron's conception in 1895—a multilayer process called the Polyfolium Chromodialytique. "It is remarkable that in this approach to the solution of the problem we should again return to one of the proposals of Ducos du Hauron, namely the 'Polyfolium Chromodialytique' in which he had conceived an ideal multi-layer emulsion, in each layer of which a different part of the spectrum could be recorded. Only rarely has such imaginative foresight been equalled in the history of invention."

I think I am right in saying that M. Louis du Hauron died in extreme poverty.

Major Klein treats the history of colour cinematography very completely. It is very noticeable that many colour processes appear to have been re-invented by many different people at different times and worked in the same manner or with very slight variations from their predecessors. The similarity of the working of most of the two-colour processes both additive and substractive is striking.

The number of additive processes that have had a great deal of money spent on them, which were doomed to failure owing to inherent parallax, appear to be many.

Major Klein gives the working details of apparently every additive and substractive colour cinematography process that has any commercial pretensions at all. He deals exhaustively with the Technicolor process and demonstrates the wonderful way in which the workers in this process stuck to it. They seem to have tried practically every way of developing a completely satisfactory colour system. The patience of these workers is something to be wondered at, as the snags they came up against must have been enormous.

The complexity of some of the beam-splitting systems described and illustrated is very remarkable. The ingenuity of the optical workers in separating the colour-analysis records, in keeping the light paths of the same length and in attempting to avoid parallax, can be described only in the words of Sam Weller when he said that his knowledge of London was "extensive and peculiar."

Major Klein is, of course, the Technical Director of Gasparcolor Ltd. He suggests that perhaps the eventual colour-system might be a merging of two existing processes, "It is probable that it is the intention of Kodak to wed the Gasparcolor process to the Kodachrome process in such a way as to present an elegant solution of the entire complex problem of negative-positive."

There appears to be no aspect of Colour Cinematography which has been overlooked by the author. If this book, as it probably won't, should get into the hands of any person about to put money into a colour process, it would be very greatly to their advantage to note the following passage :—

"When approached by people who state that they are the owners of the world rights of a perfect three-colour process, if sufficiently impressed by a demonstration reel and desirous of giving the process a practical test, the following trials of the system are suggested :—

(1) A perfectly neutral grey set must be reproduced. Black, grey and white costume. In fact, black, white and grey, everywhere except the flesh of the actor. If the set is photographed minus actors, when it is projected it should be practically indistinguishable from a black-and-white film. This condition is very difficult indeed to fulfil.

(2) No fringing whatever must be visible, even on closest inspection. Such fringing as occurs is due to faulty registration in printing, unequal size of images, parallax, etc.

(3) Adequate exposure must be obtained with less than twice the illumination brightness normally used.

(4) A lemon yellow band should be painted on a white background and photographed. The lemon yellow should be accurately reproduced. Against a neutral grey background photograph a band of vivid emerald green; ditto with violet, ultramarine blue, magenta, cerise, pink, olive green, turquoise blue. Note the reproduction of these.

(5) Finally, photograph a close-up of a face with *no-make-up* and inspect the reproduction of that particular complexion, simply for sheer accuracy of colour photography.

(6) Photograph a draped curtain of some desaturated colour such as pale blue. Take 100 ft. of film and examine the print for variation, flushing, and steadiness generally.

(7) For definition test, photograph a newspaper so as to just fill the frame and see how much you can read on the screen, and also how much can be read through a magnifying glass when the film is inspected in the hand.

(8) Photograph a dozen of the studio staff standing 30 ft. away from the camera using a 40 mm. lens, and see whether you can recognise them individually on the screen."

This book should certainly be read by all cine-technicians on the camera side. If the technician already posesses all the knowledge of the theory and practice of colour cinematography that is in this book (which is very doubtful) even then he will definitely be interested by the historical section of the book.

Your Association

Ways of Killing It

Some ways of killing a club are listed in an American journal. Some might apply to certain Cine-Technicians.

Don't come to the meetings.

But if you do come, come late.

If the weather doesn't suit you, don't think of coming.

If you do attend a meeting, find fault with the work of the officials and other members.

Never accept an office, as it is easier to criticise than to do things.

Nevertheless, get sore if you are not appointed on a committee, but if you are, do not attend committee meetings.

If asked by your chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting tell everyone how things ought to have been done.

Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly, unselfishly use their ability to help matters along, howl that the association is run by a clique.

Hold back your dues as long as possible, or don't pay at all.

Don't bother about getting new members. Let the secretary do it.

When a banquet is given, tell everybody money is being wasted on blow-outs which make a big noise and accomplish nothing.

When no banquets are given, say the club is dead and needs a can tied to it !

Don't tell the club how it can help you, but if it doesn't help you, resign.

If you receive service without joining, don't think of joining.

If the club doesn't correct abuses in your neighbour's business, howl that nothing is done.

Keep your eye open for something wrong, and when you find it, resign.

At every opportunity threaten to resign and get your friends to resign.

When you attend a meeting, vote to do something and then go home and do the opposite.

Agree to everything said at the meeting and disagree with it outside.

When asked for information, don't give it.

Cuss the club for the incompleteness of its information.

When everything else fails, cuss the secretary.

—(Reprinted from *The Commercial Traveller*).

JUST PUBLISHED.

COLOUR CINEMATOGRAPHY

By

MAJOR ADRIAN BERNARD KLEIN, M.B.E., A.R.P.S.,

Technical Director of Gasparcolour Ltd.

This is probably the first book dealing exclusively with colour cinematography, and it should fill a long-felt gap in the literature of photography; in the past the enquirer having been much hampered by the necessity of consulting numberless technical journals, obscure periodicals, or chapters in rare books. Moreover, in view of the misconceptions which are all too common among those in the industry, it has become quite an urgent matter that a book containing the required information should be made available without further delay.

CONTENTS: Preface. Historical Summary. Part I.: Theoretical Basis. Additive Processes. Subtractive Processes. Colour-Cameras and Beam-Splitting Systems. Bipack. Part 2: Analysis and Synthesis Problems. The Phenomena of Colour Vision and the making of Films in Colour. Appendices: Lenses employed in the Technicolor and Process of Cinematography, by H. W. Lee. A Glossary of Colour Photography. The Klein Tricolour Camera. The Harmonicolor Process. Index.

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The Characteristics of Eastman Motion Picture Negative Films

By EMERY HUSE, A.S.C., Eastman Kodak Company, Hollywood, California

It is generally accepted that photography is the foundation upon which the motion picture industry is built and it is not amiss to state that the negative emulsion is the foundation of photography. Primarily it is because of the importance of and the improvements in negative emulsions that photography has advanced to its present state. A decade ago camera and laboratory men were very little concerned with the color sensitivity properties of negative motion picture film, and panchromatic emulsions, while known, were rarely used.

In those earlier days orthochromatic negative film was generally used as the medium on which exposures were made. In conjunction with this film use was made of mercury vapor and arc lamps, since these light sources were considered the epitome in the field of studio illuminants. The orthochromatic negative emulsion, because of its blue sensitivity, was ideally suited for photography by the radiations emitted from the mercury vapor lamps, since the radiations from this lamp were very pronounced in the same spectral region. The carbon arc also emitted strong blue-green radiation and it was not uncommon practice to make use of both types of lamps in the illumination of a motion picture set. Since the orthochromatic emulsion was deficient in red sensitivity it mattered not at all that these light sources were deficient in this same spectral region. For exterior photography the orthochromatic film proved very satisfactory since daylight and sunlight likewise emitted considerable blue-green radiation.

It would be well at this point to digress and define more adequately the terms orthochromatic and panchromatic. A gelatino-silver bromide emulsion is normally only blue sensitive and unless the use of sensitizing dyes are resorted to, colours other than blue are inadequately reproduced. With the aid of dye sensitizing, emulsions may be rendered sensitive to other portions of the visible spectrum in addition to the normal blue sensitivity of the simple silver bromide emulsion. This silver-bromide emulsion having only blue sensitivity is referred to in photographic terminology as an "ordinary" emulsion. Using this type of emulsion as a basis for dye sensitivity research it was found that certain dyes rendered an emulsion sensitive to the blue-green, green, and yellow portions of the visible spectrum. Emulsions so treated by dyes as to produce this type of sensitivity are known as "orthochromatic" emulsions. The word orthochromatic implies that objects of different colour brightness can be rendered in a truer gray scale than with ordinary emulsions. Further research in the field of dye sensitizing led to the discovery of certain dyes which have the ability to render an emulsion sensitive to the red region of the visible spectrum, this red sensitivity being acquired in addition to the blue, green, and yellow sensitivity of the orthochromatic type. Emulsions containing this additional red sensitivity are referred to as "panchromatic" emulsions, the word panchromatic implying that the emulsion has the ability to record colored objects in terms of grays in their proper brightness relationship. The Eastman Kodak Company first undertook the manufacture of panchromatic emulsion in 1912. These earlier emulsions for the most part were coated on glass plates.

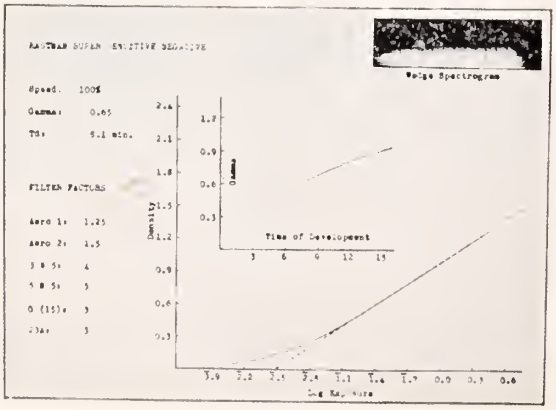

Fig. 1.

As late as 1927 the majority of motion picture productions were made using orthochromatic negative with mercury vapor and arc lamps, but from that date forward there was a steady trend toward the exclusive use of panchromatic films and light sources of the incandescent tungsten lamp type as well as high efficiency carbon arcs. The old type orthochromatic negative emulsion when used with incandescent tungsten lamps, exhibited far less sensitivity than when used with the mercury vapor arc lamps or daylight. It was natural, therefore, that a means be found to make use of this more efficient type of illumination. Since the field of emulsion sensitizing had progressed to the point where very acceptable panchromatic film emulsions could be manufactured, it was likewise quite natural that use was made of such emulsions. As was indicated above, the manufacture of panchromatic emulsions in this country began in 1912, but very little panchromatic film had found its way into the motion picture industry prior to 1927. It is difficult to state whether panchromatic film or tungsten lighting equipment first attracted the attention of the photographic world, since for years experimental research had been carried on in both fields, but it is interesting to note that both of them were brought forcibly to the attention of the motion picture industry during the latter part of 1927 and the early part of 1928. The real reason for this was due to the fact that the years of research in the two fields had reached a practical culmination at approximately the same time and since each was partially dependent upon the other, it is not difficult to understand their almost simultaneous introduction to motion picture photography.

It is impossible to discuss motion picture negative emulsions as they are now known without digressing for a moment for a discussion of another development in the field of photography which took place almost immediately after the introduction of panchromatic film and incandescent tungsten illuminations. Reference is made to the fine grain negative developer which was introduced to the trade by the Eastman Kodak Company in 1929. The reason that

this discussion cannot progress without considering the developer situation is because of the fact that this developer single handedly played a very large part in the advancement of motion picture photographic quality.

In photography that chemical solution which is used to reduce the exposed silver bromide grains to metallic silver and thus make visible the effect of exposure is referred to as the developer. A developer consists primarily of a reducing agent, an accelerator in the form of an alkali, and a preservative, usually sodium sulfite. This does not imply that a developing solution contains only three chemicals since there are quite a few other chemicals which may be properly compounded to produce a developer which will give the desired degree of chemical reduction of the exposed film. In the days of orthochromatic negative a developer of a type which we would now consider extremely violent in its action was used. This developer and modifications of it consisted of the use of organic reducing agents, sodium carbonate as the alkali for accelerating the action of the reducing agents and sodium sulfite in just such quantities to preserve the developer against undue aerial oxidation. It was necessary that an active developer be used because of the limitations in the speed of the orthochromatic film and in the efficiency of the light sources. When, however, panchromatic film and incandescent illuminations were both available there were certain photographic quality deficiencies prevalent which it was felt could be eliminated by a different method of compounding the developer solution. Considerable experimental work had been carried on in Research Laboratories of the Eastman Kodak Company and in 1929 a formula for the development of negative film, known as the borax developer, was offered to the trade. This developer differed materially from other types of negative developers in that its action was much less violent. Since it was known that sodium sulfite in excess acted as a partial solvent of silver halides, this fact was made use of. The borax developer consisted essentially of the reducing agents, the alkali and sodium sulfite in excess. Since a strong alkali causes a more rapid development and a greater tendency toward grain clumping during development, it was conceived that a weaker alkali would be an admirable partner for the silver halide solvent, sodium sulfite. This weaker alkali in the developer necessitated a longer time of development than had been customary with the old type of developers and this increased time factor gave the sulfite a better chance to get in its work. The combination of these two elements, namely, sodium tetraborate (borax), and an excess of sodium sulfite, produced the real working factors of this new developer.

Since the panchromatic emulsions exhibited a fair speed characteristic the use of the borax developer did not cause any material disadvantages from the speed standpoint, but the advantage derived was in the form of finer grain characteristics, which more than offset what at first seemed to be slight disadvantages. Because of the solvent action of sodium sulfite the borax developer produced somewhat less emulsion speed than the previous types. The very fact that this new developer came into use almost coincidentally with the introduction of panchromatic films and incandescent light sources made the problem of finally establishing a simple routine of practice somewhat more difficult. Not only were the cameramen involved from the standpoint of new lights and new methods of lighting, but the laboratory men also were confronted with the necessity of understanding fully the functions of the borax negative developer. The fact that panchromatic film, being sensitive to the entire visible spectrum, allowed for very little dark-

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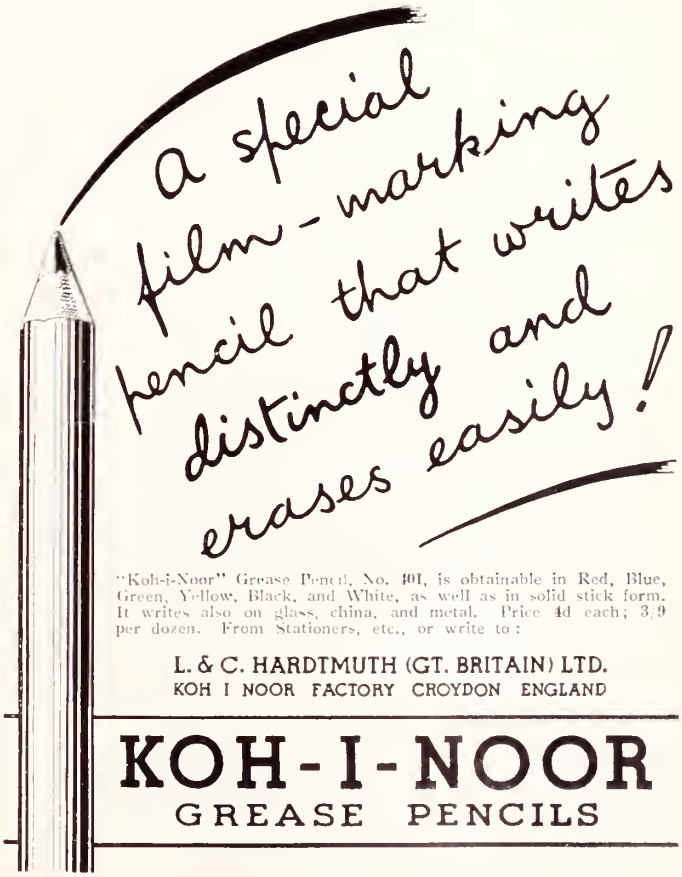

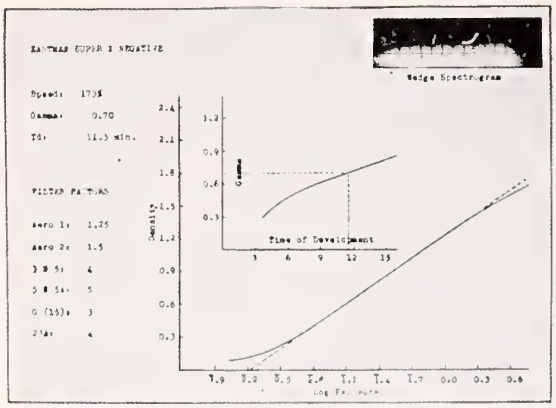

Fig. 2.

room illumination further complicated this entire problem. In the light of our present day knowledge these factors are not considered difficult to handle but at the time of their introduction there were a considerable number of obstacles which seemed difficult to overcome.

During the first year after the introduction of these three new features, considerable progress was made. In a large measure the success of the application of these various technological aspects would not have been so satisfactory had it not been for the personal artistry of the cinematographer and the splendid co-operation of the laboratory technicians. To the men of both of these important branches in the motion picture field great tribute should be paid because they both gave considerable impetus to the production of high grade photographic quality to which we are accustomed to-day.

It was found that as time progressed the first type of panchromatic emulsion used for motion picture photography was not all that could be desired. While there was progress shown it was felt by the emulsion manufacturers that definite improvements could be made in the negative emulsion itself.

The first outstanding improvement in negative emulsions was made during the latter part of 1928, at which time the Eastman Kodak Company introduced Eastman Type II panchromatic motion picture negative film. This film when compared directly with its predecessor showed a marked improvement and was the first real step in the direction of finer photographic quality. As time passed and the use of the new illuminants and the new developer were better understood, it was found that this Type II negative also lacked certain qualities which it was felt could be overcome in a new type of film. In February of 1931 Eastman Super-Sensitive motion picture negative film was presented to the trade. This negative introduced a new era in the negative emulsion field. Not only was the quality of this film superior to that of Type II but its speed was materially greater. Under daylight conditions it exhibited twice the speed of Type II, while with normal set lighting it was nearly three times as fast. There was less contrast shown by this emulsion and a much finer graininess characteristic was in evidence. This film played a very important part in the fine photographic quality exhibited in motion picture production during the years 1931 to 1935. During these latter years steady advancement was made in the field of illuminants, during which time more efficient light sources of the tungsten type were manufactured. The functions of the borax developer were more thoroughly understood. Likewise by 1931 the use of developing machines for the development of negative film, as well as positive film, had almost completely supplanted rack and tank development in the major motion picture laboratories. Machine development in itself played a large part toward contributing to better photographic results.

Following the general policy of the Eastman Kodak Company to strive continually in the improvement of its products, there was manufactured during the year 1935 a new type of panchromatic negative film which was given the name Eastman Super X. This emulsion exhibited certain superior qualities to those of the Super-Sensitive film in that a speed increase of approximately 40% was shown, together with a slightly softer characteristic and a definitely finer grain structure. This emulsion met with immediate approval after complete tests by the camera and laboratory men and at the time of this writing approximately 95% of the motion picture productions made on film of Eastman manufacture are photographed with this new Super X Panchromatic Negative.

The emulsions which have just been described are in a sense in a direct line of succession since each new one replaced the older one completely for the purpose of normal motion picture work. However, there were other fields of endeavour open to the emulsion manufacturer. During the years 1931 to 1934, particularly, considerable experimental work, as well as production work, was being done in a new field known as the Projection Background Process. This process more or less completely superseded other special effect processes which had been in use for several years. The fundamentals of the projection background process are extremely well-known but some details of it have escaped general attention. Since the process of rephotographing a projected image on a translucent screen is essentially one of duplication it may be readily observed that any step toward the elimination of the emulsion graininess characteristics would be desirable. It was conceived that a negative emulsion with sufficient speed for exterior photography, since most soft background plates were exteriors, would lend to a greater improvement of the final results of this special process. An emulsion for this purpose should have similar colour sensitivity characteristics to that of the negative but it should be dissimilar in that its grain structure should be materially finer. An emulsion for this purpose was maufactured and marketed under the name of Eastman Background Negative. This was introduced to the trade in the year 1933. Compared with Super X Negative this emulsion has about three-quarters the speed and exhibits definitely higher contrast under equal development conditions. The graininess factor, however, was excellent and without question this film soon established itself as the finest grained panchromatic negative emul-

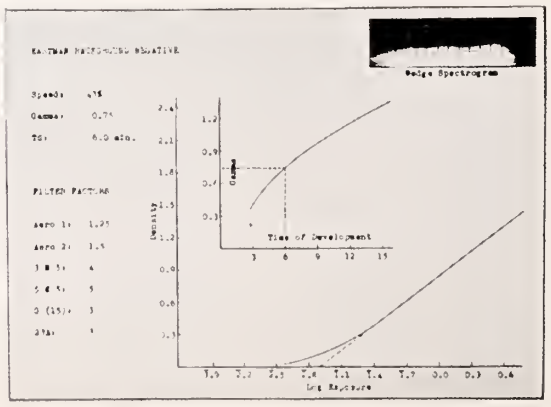

Fig. 3.

sion in general use in the motion picture field. It is to-day almost exclusively used for the production of projection background plates but other uses are being found for this film because if its very fine grained characteristic. In all the foregoing paragraphs there has been presented a miniature chronological history of the factors which have lent themselves to the achievements of photographic work which are possible to-day in the motion picture field. While it is the purpose of this paper to discuss particularly the current Eastman motion picture negative emulsions, such a discussion could not be given satisfactorily without devoting considerable time to a discussion of accompanying developments along other lines. Since it is felt that the historical side of this problem has been established, it is now possible to proceed with a discussion of the photographic emulsions themselves and the differences which exist between them.

The original panchromatic motion picture negative film as introduced in 1927 and the later Type II film, although of more recent origin, are more completely removed from the motion picture field of photography than the old type orthochromatic negative, since this latter film is still manufactured for certain laboratory purposes. It is interesting to note that for such purposes this film is rapidly becoming obsolete. The three Eastman motion picture negative films now available are Super-Sensitive, Super X, and Background. A detailed graphical and quantitative comparison of the characteristics of these three emulsions may be had at a glance by a comparison of Figures 1, 2, and 3. It will be observed that the color sensitivity difference between these emulsions is slight. The Super-Sensitive and Background negatives are essentially the same in this respect. The Super X Negative differs slightly in that its red sensitivity is somewhat reduced. This fact can be readily determined by a comparison of the filter factors of the 23A (red) filter. The filter factor of this filter for Super X Negative is 4, while for the other two films it is 3. Since the filter factor is a multiplying factor for exposure, the larger that factor the lower the sensitivity. The data on these three emulsions were obtained under identical conditions of testing. Exposures and subsequent development were simultaneously made. These emulsions may be classified in the order Super X, Super-Sensitive, and Background Negative in terms of descending speed, while from a contrast standpoint the emulsions would range in the same order for ascending contrast characteristics. It will be seen, furthermore, that the characteristics of these three emulsions are tabulated for different values of gamma. This point needs some explanation. When Super-Sensitive Negative was in general use the average degree of development given it in the motion picture laboratories was represented by a gamma of approximately 0·65. Gamma is that characteristic of the film which indicates the degree of development. With the introduction of Super X Negative and its generally lower contrast characteristic it was found desirable to raise the average gamma to 0·70, it being determined by practical test that the emulsion quality of this negative was greatly enhanced at this slightly higher value. This change in average gamma from 0·65 to 0·70 represents an increase of only approximately 8%. Since the Background Negative is inherently one of high contrast and since one of the purposes of the Background Negative is to produce a somewhat more contrasty result, it was found that an average gamma of 0·75 was desirable for this material. It should be well understood that these values of gamma are approximations since they represent the average extent of development of these films in practice. Departures plus or minus from these average values are naturally at the discretion of the individual user. The times of development to produce these average gamma values for each type of negative progress from the Background Negative, for which a short time of development is necessary, through the Super-Sensitive to the Super X, which requires the longest time. It was stated in a previous paragraph that Super X Negative is used in far greater quantities than the Super-Sensitive Negative. While this statement is true, it should be stated here that Super-Sensitive Negative film is still available for those users desiring this type of emulsion. However, indications point to the fact that before long Super-Sensitive Negative will be completely supplanted by Super X Negative.

Before leaving this subject it might be well to give some consideration to the various characteristics of emulsions and a bearing each has upon that intangible factor, photographic quality. There are many proponents to the idea that speed in a negative emulsion overshadows all other characteristics and that high speed is the most essential quality of a high grade negative emulsion. This is not true. Speed has a definite role to play because an emulsion must have sufficient sensitivity to record adequately low light intensities ; otherwise a burden is thrown upon the cameraman in the lighting of his sets. Speed, therefore, while important, is by no means the major factor to be considered in a negative emulsion from the standpoint of obtaining photographic quality. When one stops to consider that the negative emulsions of four years ago were approximately one-quarter the speed of the current emulsions, one wonders now that pictures could have been made with those older type films.

In the light of our present emulsion knowledge, Super X Negative film represents the highest speed of present commercial motion picture negative emulsions consistent with excellent photographic quality. It is quite possible to make faster emulsions, but not without a sacrifice of some of the other favourable factors. Photographic quality is a condition brought about by the combination of several elements, of which emulsion speed is but one. Contrast and graininess characteristics are the other factors of major importance.

It is generally well known among photographers that high speed emulsions usually show low contrast and large grain size. In a slower emulsion, high contrast and fine grain align themselves together. This is a very important point and should be given full consideration. It is quite possible that as emulsion manufacturing knowledge advances these facts, now considered laws might be overcome, but in the manufacture of gelatino-silver bromide emulsions, speed, low contrast, and large grain size usually go hand in hand. The one exception to this is the current Super X Negative. This emulsion shows a finer grain characteristic than some of its slower predecessors, but it is extremely doubtful that a faster emulsion than Super X Negative could be manufactured without showing a greater tendency toward graininess. While it is admitted that great speed would allow for more natural set lighting, it does not follow that the quality of the resulting pictures would be better unless the negative emulsion had contrast and graininess factors comparable to those in the current type negative emulsion.

It should again be emphasized that statements relative to the possibility of manufacturing various types of emulsions depend entirely upon current knowledge. It is quite probable that as the result of more extensive research, em-

(*Continued on page* 59)

Above is the new stand erected by the Office of Works for newsreel and press photographers on the Queen Victoria Memorial.

Built solidly of tubular iron scaffolding and heavy wood, it is extremely steady and allows lenses up to 40″ focus to be used in securing close-ups.

Each camera position is marked by letter and allows ample room for crews to work. Companies obtain their positions by drawing lots just before any event, and all pay a small fee towards the cost of its erection.

Used for the first time for the "Trooping of the Colours," it was covered in white cloth and harmonised with the white marble of the memorial.

It is mobile and can be rapidly erected at short notice by the workers of His Majesty's Office of Works, to whom great credit is due. His Majesty the King, I believe, helped considerably in forwarding this important contribution to the happy working of newsreel units.

Paul Wyand's Reconstructed Camera.

Paul Wyand, Movietone's "Panoramic Pinnacle," showed me his reconstructed camera which has some novel fitments giving speed and accuracy in manipulation which should be interesting to newsreel readers.

It is a combination of the panel system, using paired lenses on the Akley principle and a turret which allows lenses from 35 mm. to 24″ to be used without cut-off, at the same time allowing perfect focussing and brilliant corrective view-finding. Marked with mattings for all lenses up to 9″.

The longer-focus lenses use the matched lens panel system, which comes into operation by dropping the view-finding objective on hinges and turning the turret to the respective housing in which is fitted the sliding panel. The time lapse of changing is reduced to 3 or 4 ft. of film.

This camera, which is a converted Bell & Howell, is fitted with a light fixed speed 18 volt motor, having a heavy starting torque allowing immediate efficient sound recording. The filters slide straight into the gate through a slit allowing all lenses to be used without individual filter change. The camera unit is mounted on a Vinten Gyro Tripod and the reconstruction was by Lines.

Paramount Novelty.

Great credit is due to the technician who invented the idea of a series of Akley pans on to close-ups in covering the various characters at the Derby.

The continuity thus obtained in this very necessary feature of the Derby film is a great advancement in modern newsreel practice.

Newsreel Pioneers.

In a recent publication the writer on "Pioneers" gets his facts rather muddled. He quotes as "Pioneers" the names of technicians who are post-war graduates to the craft.

Here are a few facts in connection with the early development of the "Topical" as it was known well over a quarter of a century ago. The first serious topicals were made by the American Biograph Company, whose works were on the site of the Windmill Theatre. Many of the old "Bio Technicians" are still actively employed as leaders in our industry. I refer to J. B. MacDowall of Agfa; Jack Wiggins, Laboratory Manager for Universal Talking News; and Emile Lauste, Technical Expert and trade helpmate for Kodaks. Then came the Graphic Sound Company, of which Billy Jeapes, and Wrench, and I believe Cecil Hepworth, were the founders. They manufactured and ran topicals at Gatti's, Westminster Bridge Road, and the "Old Standard," now the Victoria Palace. Then there was Robert Paul, still a highly honoured scientist, with his "Animatograph" running at the Alhambra. Truey, with Back Projection, was then showing at the Empire, while Harold Jones' father ran "Bio" at the Palace. Billy Jeapes then took over the Empire, with J. B. MacDowall at the Projector.

Jeapes and Charlie Urban founded the Warwick Trading Company. Fight films and topical news were their speciality. Hepworth started on his own. There was A. C. Bromhead with Gaumont. Billie Barker started Barker's Motion Photography. Cricks and Sharp and Williamson were turning out news films.

In these far-off days every executive was his own cameraman, cutter, laboratory manager and projectionist. The boys rushed back from filming to help in the lab., printing and developing, going off afterwards, dead tired, with the "green print" under their arm, to project it at one or other of the Music Halls where competition was so keen for the

latest news. Such experts as Joe Skittrell, Frank Bassill, Bunny Hutchins, were the projection marvels of their day.

I could go on for hours, but in closing it is fine to note that nearly all these "Pioneers" are still actively engaged in modern production, many of them holding high office. There is Billy Jeapes, Managing Director of Film Labs, Universal Talking News; Bill Barker running one of the largest D. & P. organisations in the country; Cecil Hepworth, Technical Advisor to National Screen Services; Joe Skittrell, the head of that great organisation, Olympic Kine Laboratories, pioneers in modern laboratory practice; and many other first-class technicians are still in harness.

The speed of production in those days is unequalled to-day—news-films were developed in trains and cars, and the old drums, which were metal, had open gas jets running down the centres to facilitate rapid drying.—"Ex-Ray."

Motion Picture Negative Films (*continued from page* 57)

ulsions of a distinctly different type may be conceived. If this is done, a new era in photography will begin and it will be as radical a departure from what we now consider normal as that of orthochromatic negative and mercury vapor lamps to the present type of films and the high efficiency incandescent illuminants. It is safe to conclude, therefore, that the Super X type of emulsion represents the current practical limit of speed consistent with good quality. It is not meant that speed increases of the order of 10 to 20% are not possible. When it is possible to manufacture emulsions of greatly increased speed with the other factors lending to photographic quality kept within control, it stands to reason that such a film will be submitted to the motion picture trade production purposes.

—(*Reprinted from American Cinematographer.*)

100 Vacancies Filled in Six Months (*continued from page* 60)

about "gamma" when subsequent question and answer reveals that the technician does not know the gamma to which his own laboratory works. Certain technicians have a habit of expressing the opinion that they know all about the film industry and certainly much more about it than their prospective employer. Maybe they do, but maybe they don't, and it's a mistake to give the wrong impression. Several people have lost jobs because, in the employer's words, they "talk too much" or are "too big for their boots." While many technicians know they may have lost a job because they have asked for too much money, probably few realise that it is sometimes equally possible to lose a job through asking for too little. Only recently a member was sent after a job and, presumably because he was very anxious to obtain the post, quoted a salary of about half what a reputable company generally pays. He did not get the job, and another equally qualified member, who asked for a reasonable salary, was engaged. A.C.T. is always willing to advise members on the question of salaries.

Conclusion.

The Bureau is not only rendering a service to A.C.T. members but to studios and production companies generally. It is proud of its record and appeals to A.C.T. members to help maintain it by observing the conditions of registration and adding prestige to the Association by doing their job conscientiously and satisfactorily. Employers will continue to use the Bureau just as long as it is able to deliver the goods. Our members play an invaluable part in achieving that end. On its part the Association will strive to reward their trust in it as the only organisation competent to safeguard their professional interests.

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100 Vacancies Filled in Six Months

The Work of the A.C.T. Employment Bureau

By GEORGE H. ELVIN, A.C.I.S.

It has been said that credit for the large membership increase of *The Association of Cine-Technicians* during the past eighteen months is due to its Employment Bureau. Finding employment for members is a ready way of assuring them of the material benefits to be derived from membership. A.C.T. is, however, executing many other important functions which are equally playing their part in recruiting members. We appreciate, nevertheless, the value of being able to point to our Employment activities in reply to that frequently answered question, "If I join, what do I get out of A.C.T. ?"

There is less continuity of employment on the technical side of the film industry than in almost any other profession. Until January 1935 there had been no proper agency through which production companies and studios could engage staff. *The Association of Cine-Technicians* has remedied that position. During 1935 over 40 employers applied to the Bureau for staff, resulting in approximately 150 vacancies being filled. Recent figures denote further progress, in spite of a lull in production activities during the early part of the current year. 48 production companies and studios have engaged over 100 technicians through A.C.T. during the first six months of 1936. The former figure includes almost every active studio and production company. The posts filled include employment in the following departments :—

Camera (lighting, operative, assistants and newsreel), Sound (recordists, sound camera and floor assistants), Stills, Editing and Cutting, Floor and Production (Assistant Directors and Script Girls), Art, Laboratory and certain miscellaneous posts such as cartoon animators.

It should be noted that :—

(I.) The A.C.T. Employment Bureau is the ONLY EXCLUSIVELY FILM TECHNICAL EMPLOYMENT AGENCY licensed annually by the London County Council ;

(II.) ONLY TECHNICIANS WHO ARE MEMBERS OF A.C.T. MAY USE THE BUREAU and a fully-paid-up membership card must be produced on registration ;

(III.) NO FEES ARE CHARGED. A.C.T. only asks a member to remember his obligation to pay his subscriptions while in employment. No subscriptions are due while unemployed, during which period the Association makes every effort to find suitable posts.

Accurate Information Essential.

Applicants for registration on the A.C.T. Employment Register have to complete a form requiring full details of capabilities, experience, salary and so on. The Bureau can only function satisfactorily as long as it is able to give satisfaction. Once an attempt is made to fit square pegs into round holes the confidence of employers is lost and other ways of engaging staff will be used. The Association has had a singularly happy record of giving satisfaction to employers and it has no intention of marring it by finding members jobs which they are not competent to perform. Over-ambitious technicians should note that all information supplied on the Employment Form is carefully checked and that references are taken up. A Membership Advisory Committee has been formed to grade members and its work is a very helpful guide to the Employment Bureau.

There is, on the other hand, no objection to a member stating that he feels he is competent to do a higher grade job than that to which he is used, or expressing the opinion that he should earn more money than that to which he has been accustomed, provided he fills in accurate details of his present position and salary. These aspirations, however, must be recorded separately, and will be very carefully investigated. It may be possible to suggest to a potential employer that he give such a member the opportunity of advancement he seeks.

Conditions of Registration.

Conditions of registration, attached to the Employment Form, to be detached and retained by the member after its completion, MUST BE OBSERVED. The important conditions are :—

(*a*) If the Association sends the applicant to interview a prospective employer, the applicant MUST INFORM THE BUREAU OF THE RESULT OF THE INTERVIEW ;

(*b*) Should the applicant obtain work through other channels he must inform the Association so that his name can be WITHDRAWN FROM THE REGISTER;

(*c*) The applicant whose name has been accepted for registration must NOTIFY THE ASSOCIATION BY LETTER OR TELEPHONE EVERY MONDAY if he wishes his name to remain on the Register. Otherwise it will be assumed that employment has been obtained, and the member's name will automatically be removed from the Register.

Delays have frequently been caused through members failing to observe these conditions. The Bureau can only function smoothly if the Register is up-to-date. If the A.C.T. office is unaware of its members' movements—they sometimes even omit to notify a change of address or telephone number—delays must inevitably occur and the usefulness of the Bureau must suffer.

Registration on the Employment Bureau, while principally open to members without employment, is also open to those who feel they are desirous of self-betterment. Naturally, an unemployed member has first preference over vacancies available, but on occasions there is not a suitable technician available, when A.C.T. is pleased to recommend a member who is competent for a better post.

How Employment is not Obtained.

Technicians are frequently surprised that they do not obtain a particular job. Employers have, on occasion, told us the reasons. Sometimes they would surprise the technician concerned.

The employer frequently knows as much about the technician as the individual concerned, film production being a comparatively small world. Inaccurate estimates of one's own capabilities generally fail to achieve their objective. It is no use, for example, claiming to have edited a picture if the screen credit tells a different tale. Similarly it is useless, to quote a recent case, talking big

(Continued on preceding page)

Film Exhibition by Polytechnic Students

BUDDING film technicians held their own exhibition when the students of the Kinematograph Section of the Polytechnic School of Photography showed a series of sub-standard films at Portland Hall on June 11th.

A. M. Angel, with his "Racing at Northolt Park" and G. R. Kingham, with his "Life at a Riding School," were responsible for the best work. Both displayed camera sense and were not afraid to break away from conventional shots. M. Curtis in "Port Isaac" failed to appreciate that he is making *moving* pictures: still photography might be more in his line. P. H. Drake was daring in attempting "a purely experimental film," endeavouring to interpret "Debussy's well-known music in visual form." This film, "La Mer," compares very favourably with other pictures of this type. The photography of John Eldridge's film "Sea Drift" had some good points, which is more than can be said about the commentary, which was delivered in a jargon unsuited to the screen unless one happens to be W. H. Auden. "Young England" was the only film bold enough to tackle interiors. A. G. Truscott over-burdened it with unnecessary sub-titles and appeared a little too smugly conscious of the honour of being a son of the British Empire, but he gave us a fairly competent account of L.C.C. School-life.

As was expected, the films had faults: they were unskilfully edited and the sub-titling was below standard. None of the students showed cinematography taken under studio lights. Probably their training, however, did not give them this opportunity.

A.C.T. will watch the progress of these students with interest. They must not be disappointed if, on obtaining their first film post, they are not immediately given a film to photograph. They must expect rather to have to load cameras, operate "clappers" and run errands. And they will find themselves, in the long run, all the better for it.

G. H. E.

81st Annual Royal Photographic Society Exhibition

THE 81st Annual Exhibition of the Royal Photographic Society will be held from Saturday, September 12th, till Saturday, October 10th.

In accordance with the usual practice various competitions will be held in the following classes of photography:—

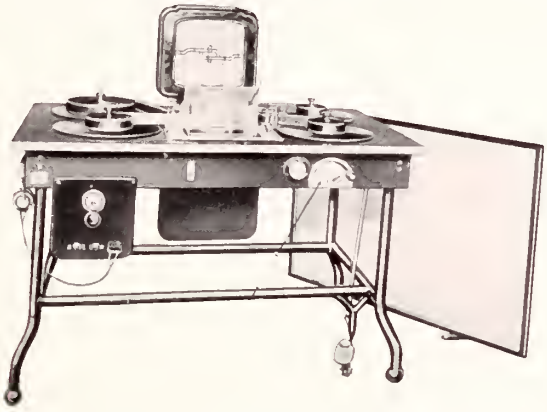
(1) Pictorial Photography.
(2) Colour Photography.
(3) Natural History and Scientific and Technical Photography.
(4) Kinematography.

With reference to the latter, which is of particular interest to A.C.T. members, the competition is both for standard and sub-standard film.

The Judges are Messrs. R. H. Cricks, F.R.P.S., A. S. Newman, F.R.P.S., and Oliver G. Pike, M.B.O.U., F.Z.S., F.R.P.S.

All classes of films are eligible: Scientific, Technical, Topical, and General Interest, etc. Films of standard size (35 m.m.) may be submitted in lengths not exceeding 1000 ft., and those of sub-standard size in lengths not exceeding 400 ft. They need not have been developed or printed by exhibitors, and judging will be primarily from the point of view of production.

(Continued on page 65)



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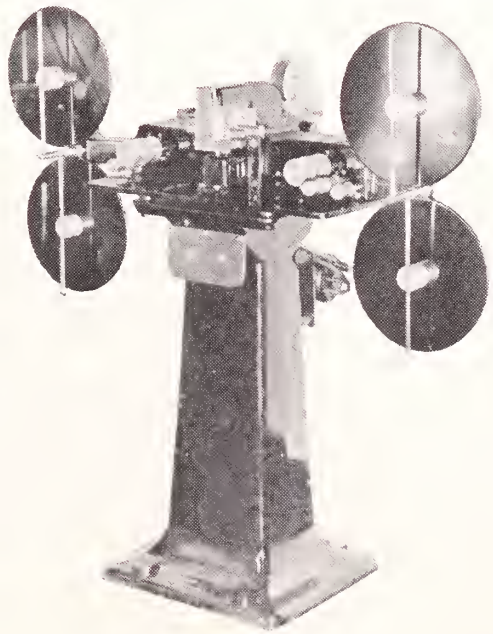
For 2 tracks simultaneously.

5 figures (1—99999).
10 letters (A—K).
Prints foot-numbers at every 16th frame!
New ribbon printing device makes ink unnecessary!



Technicians' Day of Reckoning

Third Annual Conference

THE Third Annual Conference of the Association of Cine-Technicians was held at Anderton's Hotel, Fleet Street, on Sunday, May 10th.

The Annual Report was outlined at length in the last issue of the Journal. The proceedings generally had an excellent press and it only remains to give a brief summary of the Conference and touch on its high-lights.

Firstly, the excellent attendance. Nearly 200 members were present from 34 studios, production companies, newsreel companies and laboratories. The number would have been still larger but for the fact that some companies were shooting on the Sunday.

The Chairman. We all knew Ivor Montagu was made for the job, but the way he steered through this super-production at the speed of a "quickie" without, however, refusing anybody a hearing or rushing past essential business, brought forth peans of praise. Mr. Montagu set the tone of the whole Conference when in welcoming the delegates he expressed the opinion that A.C.T was at a turning point in its history. "The past years," he said, "had been spent in establishing a solid foundation and basis upon which to work, but we could look forward in the near future to 100% representation in so many studios that no-one could fail to recognise the Association as the soundest organisation of its kind in the industry."

ANOTHER TOP-HAT TECHNICIAN.

MR. FRANK BASSILL AT THE OPENING OF THE EMPIRE EXHIBITION, WEMBLEY.

(Further contributions to this series would be welcome).

Membership was reported as 900 (an increase of 812 since the previous year), which represented 670 on the studio side, 180 laboratory workers and 50 newsreel technicians. *As we go to press we are pleased to report that the membership has reached a further milestone and is now* 1006.

There were few changes in the officers of the Association which, for the ensuing year, are J. C. Gemmell, Desmond Dickinson, Thorold Dickinson, Kenneth Gordon and Ivor Montagu (Vice-Presidents); Miss Jean Ross (Treasurer); Alex. Fisher and John Neill-Brown (Trustees); Miss Toni Roe and Arthur J. W. Nurton (Auditors); and R. Bond, A. Fisher, C. Knott, T. Lyndon-Haynes, C. Phillips, S. H. Cole, A. Graham, A. Lawson, J. Neill-Brown, and F. P. Tennyson (The General Council members elected under Rule 50, who serve together with studio and sectional representatives).

A proposal to reduce subscription rates was heavily defeated after Mr. Cole had led the opposition on behalf of the General Council. It was pointed out that for the first time in its history the Association was on a sound financial basis and any reduced subscriptions might lead to a falling off of income tending to disturb the present happy position. The General Council agreed to consider the possibility of granting a small discount to members choosing to pay their subscriptions quarterly, half-yearly, or annually.

General Resolutions were reached after tea and provided excellent discussions on subjects of paramount importance to cine-technicians. A resolution in favour of insurance and superannuation for technicians was carried unanimously and a resolution in favour of application for affiliation to the Trades Union Congress was carried with only four dissentients. It was made clear that such a step was non-political and that A.C.T.'s present policy of allegiance to no one political party would be continued.

A resolution dealing with conditions of employment was introduced on behalf of the General Council. It was pointed out that although salaries and working conditions were satisfactory in certain studios the exact opposite was found to be the case in others. The question of overtime and Sunday work, which no technicians wanted but which they were willing to do if absolutely necessary, again showed surprising anomalies in various sections of the industry. For example, at Nettlefold's studios the management held the view that the cost of production was increased and the quality of work deteriorated if abnormally long hours were worked. Nettlefolds, therefore, levied such "uncommercial" charges for Sunday work that as a matter of fact on no occasion during the making of Quota pictures throughout the whole of 1935 had it been necessary to shoot on a Sunday. The average finishing time on week days for the whole year was 8 p.m. At certain other studios the advisability of this policy was not appreciated and the hours worked were abnormally

long and in some cases no financial recompense was made for long hours or Sunday work, even to the lowest paid technician.

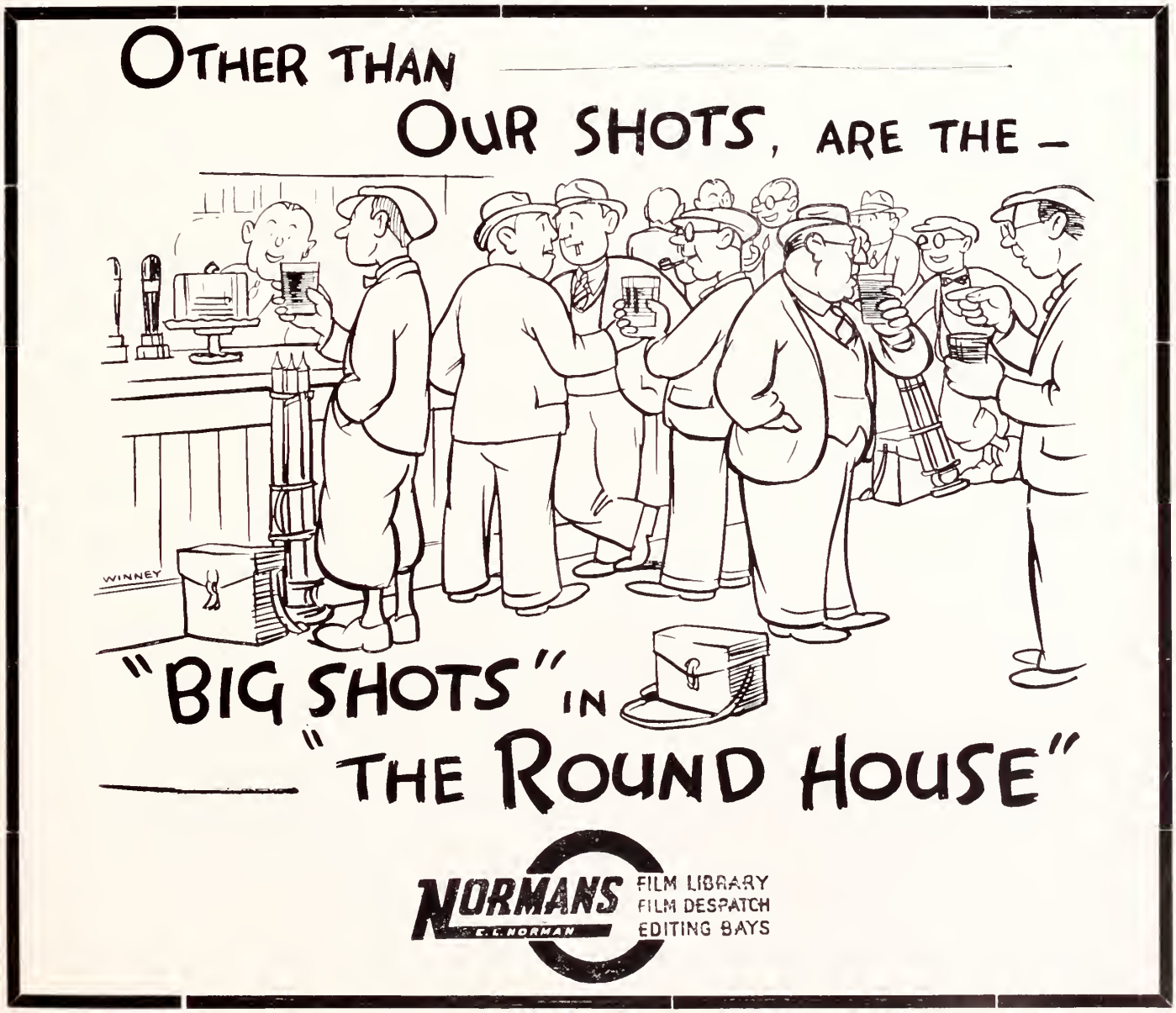
Conditions on the laboratory side were dealt with, where it appeared that the wages and working conditions were even more chaotic. Dealing with the question of newsreel workers, it was pointed out that one of the chief complaints was the tendency to introduce non-professional labour and the instance of the L.C.C. training firemen as cinematographers was quoted.

In connection with the general employment problem within the industry, mention was made that the majority of A.C.T. members were not eligible for State Health and Unemployment benefit, and that a fluctuating amount of periodic unemployment brought down the "REAL" salary of technicians.

A.C.T.'s case for presentation to the Board of Trade Committee enquiring into the future of British films, bearing in mind the approaching expiry of the Quota Act, was discussed. A report of the Association's evidence drawn up immediately after the Conference, is to be read elsewhere.

The vital question of foreign technicians, dealt with fully on another page, was the last subject on the Agenda, which Mr. Desmond Dickinson introduced on behalf of the Council.

By this time the Conference had been hard at it for six hours. It was pleasing to see that most of those present stuck it through to the end, realising that the Annual Conference provides members with their biggest and best opportunity to discuss the GENERAL PRINCIPLES of A.C.T. If this same interest is continued in the activity of the members throughout the coming year, the Association must go forward from strength to strength.



French Technicians' Improved Working Conditions and Salaries

READERS will be aware that the organised workers in France have been able to bring about considerable improvements in their working conditions and wages as a result of laws passed by the new French Government immediately upon assuming office. These benefits have not escaped the film industry. A joint agreement has been negotiated on behalf of all film workers by the two organisations concerned, namely, Le Syndicat General des Travailleurs de L'industrie du Film and La Chambre Syndicale des Industries techniques de la Cinematographie.

Monsieur H. E. Darol (Mr. H. E. Earle) Treasurer of the technicians' organisation, who will be remembered by London Film technicians as editor of "The Ghost Goes West," has sent us a copy of the new working conditions and informs us that there has been a general increase in salaries of between 7% and 15% and that in certain cases the increases are as great as 75%. "It is indeed a great success," he writes, and concludes "I send fraternal salutations to all cine-technicians in my name and that of my colleagues."

The principal clauses of the new agreement are :—

Working Hours—

(a) 40-hour week.
(b) No work on Sundays, Bank or Public Holidays, or night work.
(c) Lunch break from 12 to 1.30.
(d) A half-hour break after four hours where crew is required to work for a total of seven hours.

Overtime—

Total abolition of overtime.

When unavoidable circumstances make the extension of working hours necessary, extra time cannot be worked without the authorisation of the appropriate Trade Union representative. All time worked after normal hours shall be paid for at double rates.

Engagement of Staff—

All vacancies are to be supplied from the appropriate Trade Union, from the unemployed records of that Trade Union.

French Technicians and Film Workers celebrating their recent victories by singing the "Marsellaise."

Termination of Employment—

(1) *Studio*: Eight days' notice to be given if worker has been employed for more than one month, fifteen days' notice if worker has been employed for more than six months. Engagements of less than one month's duration must be specially contracted for.

(2) *Other Grades*: No worker shall be dismissed within less than one month from the end of production.

Holidays—

(1) *Studios*: Fifteen days' holiday with full pay, per annum, for all workers who have been employed more than one year. Holidays at a proportionate rate for persons employed for less than one year.

(2) *Works and Laboratories*: In view of the fact that employment in Works and Laboratories is injurious to health, the minimum holiday shall be three weeks.

Hygiene—

General sanitary safeguards for health and hygiene of the workers.

Accident and Illness—

Victims of accident or illness shall find their place open upon recovery. They shall be fully paid during sickness.

Location—

Persons required to work on location shall be paid an additional sum of 80 frs. (about £1) in addition to 15 frs. (about 4/-) for each meal.

Salaries—

Salaries are good judged purely from a monetary viewpoint, and compare favourably to rates in this country. In certain categories, particularly on the laboratory side, they are greatly in excess of British rates. As a "real" salary, that is bearing in mind the short working week, holidays on pay, payment during sickness, they greatly exceed salaries paid in any other country, as the following extracts from the salary clauses denote :—

FRENCH RATE.		Approximate Equivalent English Rate.
Sound.		
Mixers, ...	5000 frs. p. month.	£15 per week.
Assistants, ...	2500 ,, ,,	£7 10/- ,,
Sound Engineers,	5000 ,, ,,	£15 ,,
Assistant Engineers,	3000 ,, ,,	£9 ,,
Projectionists.		
Chief Projectionist,	3300 ,, ,,	£10 ,,
First Operator, ...	2500 ,, ,,	£7 10/- ,,
Second Operator, ...	2100 ,, ,,	£6 5/- ,,
Camera.		
Camera Operative,	800 ,, per week	£10 5/- ,,

(*Continued on page* 65)

Standardisation in the Motion Picture Industry

Mr. Desmond Dickinson and Mr. G. H. Elvin represented the Association of Cine-Technicians at a Conference on May 22nd, 1936, convened by the British Standards Institution to discuss standardisation in the Motion Picture Industry.

The Conference was very well attended, being representative of almost every side of the British Film Industry.

Dr. E. L. Armstrong, F.R.S., of the British Standards Institution, presided, and in opening the Conference explained the principles which guide the work of the British Standards Institution and described the functions of an Industry Committee, emphasising that no standardisation was carried out without the whole-hearted consent of the sections of industry concerned. Further, before any standard was adopted and published, it was circulated widely in draft form to all those interested, who then had an opportunity of reviewing and criticising it as they felt necessary.

In the course of discussion the necessity for maintaining the closest collaboration with the work of the Society of Motion Picture Engineers in America was stressed. In reply to this, it was explained that arrangements already existed whereby the British Standards Institution was being kept in the closest touch with the work of the S.M.P.E. in America, and the assurance had been given by the Americans that in future any standard proposed would be submitted to this country for consideration and review before it was finally adopted and published in America.

The proposal that an Industry Committee should be appointed to be responsible for Industrial Standards for the Kinematograph and allied industries was put to the Conference and carried unanimously.

Some discussion then followed with regard to the constitution of the Industry Committee, and it was suggested that a small *ad hoc* committee should be appointed to make recommendations with a view to securing a committee with a balanced representation of the whole of the industry. The constitution of this Committee was then agreed, and it was decided that the recommended Constitution drafted by this Committee should be circulated to the organisations represented at the Conference for their information and comment. This has recently come to hand.

French Technicians (*continued from page* 64)

			Per Week.
Laboratory.			
Chief Printer, ...	900 frs. p. week.	£11 10 -	
Negative Developer,	700 ,, ,,	£9	,,
Positive Developer,	600 ,, ,,	£7 15 -	,,
Editing and Cutting.			
Editor, ...	1000 ,, ,,	£13 5 -	,,
Negative Cutter, ...	600 ,, ,,	£7 15 -	,,
Positive Cutter, ...	600 ,, ,,	£7 15 -	,,

R.P.S. Exhibition (*continued from page* 61)

The Selecting Committees will make no distinction between members and non-members of the Society, or between amateurs and professionals.

The closing date for entrance is Friday, August 14th, and an Entrance Form and full details may be obtained from the Secretary, Royal Photographic Society, 35 Russell Square, London, W.C.1, or from the A.C.T. offices on or before that date.

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INKY LIGHTS FOR HIRE

BROADSIDES

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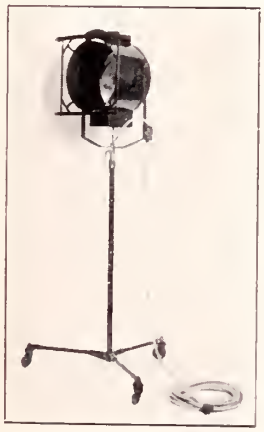

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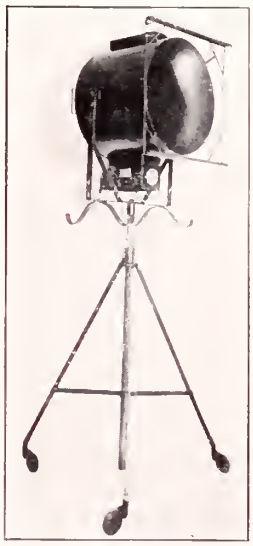

5 KW.

W. PITCHER, 181 Blackfriars Road, London, S.E.1

Recent Publications

The Art of Film Production by Andrew Buchanan, with an Appreciation by John Grierson. Pitman, 5/- net.

Few people are better qualified to discuss the art and craft of Movies than Andrew Buchanan, who year in and year out produces 52,000 feet of film, covering practically every subject under the sun.

Mr. Buchanan has his likes and dislikes—and in the main we agree with him. He dislikes adapted stage plays and excessive dialogue, financial interference with creative artists, and the commercial system which does not permit directors to write their own scenarios and cut their own films.

He is a firm believer in the documentary film, whose object should be "to make the public conscious of the world it lives in—to project the nation to the nations." He believes that films fall into two main categories—the Dialogue picture which is "static, national, related to the stage," and the Sound film, "dynamic, international, treating of subjects impossible to convey by any other medium."

Mr. Buchanan plumps for the Sound film and greater naturalism.

The book contains much practical advice to the amateur and the would-be documentalist and one of the best chapters deals with the filming of industry.

The only criticism we have to make is of its form, and not its contents. It is rather like one of Mr. Buchanan's own Ciné Magazines, it jumps from one thing to another in a most inconsequential way.

RALPH BOND.

Film Music, by Kurt London. Faber & Faber. 12/6 net.

Mr. Constant Lambert's foreword unsays in two sentences the philosophical purpose of Mr. London's book. "The sound film offers the serious composer a reasonable commercial outlet for his activities."

"Moreover it opens up a new life for the composer whose talents are more executive than creative."

This scathing encomium of film-music is justified by the author's curious catalogue of composers in which Franz Lehar is placed "at a very considerable distance behind" Fredrich Holländer and Mischa Spoliansky.

In the earlier part of his book Dr. London gives an interesting history of the use of music to "illustrate" the silent film. He recalls how millions made their first acquaintance with the classics at the old "silent" cinemas, much indeed as more millions peel the potatoes and do the mangling nowadays to an ever-flowing musical anodyne from the B.B.C. Whether it was good for the music or the listeners to hear Schubert's Unfinished Symphony translated into a "Light flowing agitato" or opera "selections" on a cinema band is questionable, and the truth of the statement that "the cultivation of the music in the cinema theatres of 1913-1928 reached an astonishingly high level" depends upon one's capacity for musical astonishment.

The old cinema conductors have gone, with their fade in, fade out, and "faked" modulations, and in their place we have—what ?

Dr. London gives extracts from modern film scores by English and Continental composers, among which I find one by M. Sarnette which bears a suspicious likness to the attenuated wind-octet scoring we used thirty-odd years ago to make gramophone cylinder-records.

The argument seems to be that since it is easier to record a wind-octet than a symphony orchestra, it is therefore correct and progressive to do so. Here I venture to think the modernists are going astray. Their hard unsympathetic bald-headed dissonances, unrelieved and unsoftened by stringed instruments—the soul of the orchestra—are splendid for describing a railway junction, a foundry or a Parliamentary debate, but it will be found that the real strength of music in films is in its emotional appeal, especially when applied to the millions who only receive music subconsciously.

There are two curious examples from Becce, one of the pioneers of "descriptive" film music. They show how music, which was ideal in "translating" the silent film, fails utterly to reach the level of a really imaginative sound-film like "Ecstasy."

It is pleasant to see Honegger's applied genius recognised, and there are interesting comparisons and valuations of the work of Milhaud, Auric, Weill, Ibert, Malapiero, Shostakovitch, and others known in the mu.ical, as distinct from the film-musical world.

Our British composers are kindly, if a little patronisingly remembered, though it is noted with regret that Bliss and Walton have not yet abandoned the pernicious habit of writing for strings.

The book contains a great deal of interesting technical information, and will I imagine be read by many musicians, amateur and professional, who know nothing of the adventures of their art in the film studio, where it must bend the knee and bow the head and generally order itself lowly and reverently before its betters.

ERNEST IRVING.

Photography To-Day, by D. A. Spencer, PL.D., D.I.C., F.R.P.S. Oxford University Press. 3/6 net.

Dr. Spencer has given us a most valuable book on photography and at a price within the reach of all.

After very many years of practical experience in a number of branches of photography, I have found this book of absorbing interest ; in my opinion it is of undoubted help to the most advanced worker as well as to the beginner.

Dr. Spencer takes us from the early efforts of Fox Talbot in 1835 up to the present day, and in so doing impresses upon his readers the enormous strides photography has made in one hundred years.

The book is profusely and beautifully illustrated with very fine examples of every branch of photography, and to the earnest worker these illustrations should act as a spur as well as a guide.

In this short review or, I should really say, appreciation, it is impossible to single out any particular branch —they are all so concisely and well covered.

A quotation from the foreword to Chapter VI. bears repeating : "Visitor to J. W. Turner's studio : 'What is it that you mix with your paints to get such glorious results ?' Turner : 'Brains !'"

I can thoroughly recommend "Photography To-Day" to all who have this absorbing subject at heart—to get results one must have that.

LEWIS PROTHEROE, A.R.P.S.

Waterloo in Wardour Street, by Eric Siepmann. Chatto & Windus. 7/6 net.

Firmly grasping the nettles of truth, Eric Siepmann has a dig at the film business. The book should be a great entertainment to the reader who happens to be involved in the complicated art of film production. The story borders on phantasy, as all good stories should: it relates to the budding "Napoleons" who are ambitious to screen to the long suffering public the outpourings of their vivid but alas ill-matured imagination.

The spineless individual who inadvertently wanders into the office of an embryo film corporation finds himself landed with the job we have been dreaming about at some time or other. Knowing absolutely nothing about film production he eventually becomes the biggest noise in the show. Thus the story runs true to life! The little dago (whom our hero supplants), although quite mad, is nevertheless human and his type can be easily recognised.

One suspects the author has had first-hand experience of his subject. Maybe the film business was too crazy for him to find the particular ladder that leads to the elevated neons boosting the stars!

JAMES S. HODGSON.

Adrian Brunel's New Book

"**Film Production.**" Newnes. 7/6 net.

It is a pleasure this quarter to find another book written by a professional rather an aesthetician. This book is severely practical. I almost said too severely; but it is intended for the amateur cinematographer, and the plainest of practical hints will help him in the long run better than the philosophical analyses of an Arnheim or a Spottiswoode. He is likely to acquire theories of his own as he makes his films, and the theories will be better for being so acquired. On the other hand, he may find he is more interested in the film itself than in words about it, more inclined to theorise with camera and scissors than with a pen. Perhaps that will be a good thing too.

The book covers, in simple exposition, the main departments of film production—camera, cutting, script, etc. It also has short appendices contributed by professional technicians on each of the special jobs performed on a film. And a glossary of suggested character-names, some of which struck me as a little ingenuous. It is light but very clearly written and should be valued by the amateur. The professional will read it with interest, but I hope that one day Mr. Brunel will give us a weightier book, directed more to the professional technician.

SIDNEY COLE.

The articles on scenario writing seem generally informative as one might expect from the writers. Since this book is devoted largely to the interests of amateur cinematographers one does not expect nor does one find any very detailed advice to the would-be scenarist. However, the writers pass to their readers an amount of technical assistance that should be of use to them. Rather more emphasis might have been given to the various stages through which a story passes before appearing in its final form as a shooting script. There must be few connected even remotely with cinematography who are not aware of the trials, tribulations, contortions and perversions through which a story passes before it is finally moulded into shape. But such problems may be left to those who are paid to wrestle with them and need form no substantial part of the pleasures of the amateur cinematographer.

It should be an inducement to such amateurs to continue with their labours to realise the immense shortage of qualified scenarists and the very substantial rewards attached to such work. At the moment it is probably one of the very few undercrowded professions.

WALTER MEADE.

Western Electric

H. C. Humphrey Succeeds S. S. A. Watkins

The appointment of Mr. H. C. Humphrey as Technical Director to succeed Mr. S. S. A. Watkins, who is returning to America, has been announced by Western Electric.

Mr. Watkins has always maintained close contact with A.C.T., has contributed to the Journal and has helped the Association in many other ways. Our sound members particularly will regret Mr. Watkins' departure, but they will be pleased to know that he hopes to keep in occasional touch with us from America.

Mr. Humphrey joined the Bell System in 1924 in the Technical Research Department, and designed, installed and supervised the operation of the first commercial Western Electric Recording Studio at Warner Bros. He also designed and installed the first sound-on-film recording system in the Fox-Case Studio, New York. He was also responsible for designing and installing the sound equipment at Paramount, M.G.M., and other Western Electric producer-licensees. Prior to coming to this country he was Assistant Director of Engineering for Electrical Research Products, Inc. We feel sure that the relationship between Western Electric and A.C.T. will continue to be as cordial under Mr. Humphrey as it was through Mr. Watkins.

The Journal of the Association of Cine-Technicians

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Editoral Committee:
Sidney Cole, George H. Elvin, Kenneth Gordon.

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The Association of Cine-Technicians,
30 Piccadilly Mansions,
17 Shaftesbury Avenue,
London, W.1.

Pog goes off in a huff

Pog's gone all Continental. He's locked himself in on a stay-in strike. Says he doesn't like the colour of our blue pencil. Maybe, not red enough? Anyhow he's burgled his 'copy' from the office so we call him "Mr." Pog now. We have swept up a few short ends for you instead.

Credit Titles to :—

Richard Haestier for this —

"She (Norma Shearer) has a son old enough to go to school. Both she and her husband are rich. The boy could either have an expensive tutor or be sent away to an exclusive school for the progeny of Society people. Norma's boy goes to an ordinary local school which is co-educational, and attended by the sons and daughters of very ordinary folk, some of them *studio technicians*." Our italics.

Walter Webster for telling us "with lots of film love" :—

"The Cine-Technicians are nice boys."

We hope Norma Shearer reads this.

"*Tatler*."

"Who the devil are the A.C.T.?"

Tut, Tut, and who the devil is "Mister" Tatler?

Health Note :

Ken Gordon slimming on pineapple and fish. Has eaten so much fish recently his stomach goes in and out with the tide.

Our Spies Inform Us :

Italy still making pictures in black and white.

Hollywood.

Most of the lighting boys now on paid holiday in England. Rumour that in consequence they are promoting operators to lighting here.

"*Writ with estimate*" the new motto of certain technicians who like their "quid pro quo" but don't get it. Even half-a-quid wouldn't be so bad!

Names Wanted :

The Actor who, when asked to explain his two-colour shirt, replied "Bramlin's Second XI."

The Very Young Technician who, when asked to fetch a blimp, went out and bought an "Evening Standard."

By Gad, Sir, that's low!

The British Technician who suffered from home-sickness at Denham.

Which studio contemplates a new staff appointment—that of British Consul?

Film Saying of the Quarter :

"Never give a sucker an even break."

W. C. Fields in "Poppy."

Definitions :

Dolly is the canteen waitress, or the girl you met on location last year.

A Dolly Shot means tracking after Dolly.

Jolly Ballad :

(*Reprinted from "World Film News," by kind permission of the Editor*).

Sing hey! for forty novelists
At eighty pounds a week
And ho! for Spanish cameramen
Who cannot Eengleesh speak.

Hoch! Hoch! for German regisseurs
Zut! Zut! for French vedettes
(And shame on English carpenters
They clutter up the sets).

So build another studio
And sign another star,
Announce another superfilm
And issue shares at par.

And throw a cocktail party
At a very large hotel,
Inviting all the journalists
And H. G. Wells as well.

Put out the flags in Wardour Street,
Unfurl the Union Jack,
God bless the British studios
(And give John Jones the sack).

Envoi

Princes, may gold Niagaras
Fall foaming in your laps,
And may you (later on) find time
To make a film—perhaps.

Three-Hour Meal Break!

Council Members set a Precedent!

The General Council went into session at 8.45 on Saturday, May 9th, the eve of the Annual Conference. "Any other business" was reached nearly three hours later. We had met regularly and often during the past year to attend to A.C.T. matters. The eve of the Conference provided a suitable excuse for a more leisurely and non-controversial meeting. We went to a fresh Council room—"Pinoli's." The Secretary was able to drink—or was it eat—his soup instead of reading Minutes—and no questions asked. Kenneth Gordon tried hard to translate the menu and Ivor Montagu denied at some length the allegation of a notable news-sheet that his active days on the tennis court were over. "Pog" was there, and his work adorned one sheet of the menu. The "Journal" wants no libel action—hence no quotations.

At item 5 on the Agenda—poulet en casserole (chicken, potatoes and greens to non-"ace" technicians) a loud whisper was heard "Please Gawd, no speeches."

Item 7 saw Sidney Cole light his cigar ("Boss-prop!" from Ken Gordon) and the Chairman reminded the company of the above mentioned stage whisper. But "Everybody must do their bit. Everybody in turn must talk for two minutes." Off we went, round and round and round the table. It was not a drawing room, and so here the account of the General Council's first get-together must end. Except we wish to assure our members that we all loyally paid our own whack and no swindle-sheets have been sent in to the Association's Treasurer—so far.—"Nine."

The Journal of the Association of Cine-Technicians

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Time Marches On

The General Council of The Association of Cine-Technicians extends Christmas and New Year Greetings to all A.C.T. Members and readers of the "Journal," to its friends in the Film Industry and its colleagues abroad. May progress continue and 1937 produce still better pictures and even greater technical achievements.

Photographs by kind permission of The Studio Ltd., from "Movie Parade," reviewed elsewhere.

FADE OUT

We have asked leading technicians in all branches of cinematography and departments of film production, and our friends of the press, to let us have their views on their particular section of the British film industry, or indeed, a short message of any kind which will be useful at the stocktaking which invariably occurs at the end of one year and the

Contributors

ANTHONY ASQUITH—Studied film technique in Hollywood in 1926. Directed films for B.I.P., 1926-1930, Gaumont-British 1931-1934, and is now with London Films. At present directing a film for Capitol Productions. Productions include :—"Shooting Stars," "Underground," "Tell England," "Cottage on Dartmoor," "Lucky Number," "Moscow Nights."

JO BACKHOUSE—One of the best-known floor secretaries, with many years' experience on all types of productions.

BERNARD G. BROWNE—Cameraman, London Films. Made "Wharves and Strays."

SIDNEY COLE—B.Sc. (Econ.). Free-lance Film Editor. At present with Fanfare Productions. Member, Film Society Council.

ANSON DYER—Cartoonist. Director of Anglia Films Ltd., producers of colour cartoons, including "Sam and His Musket," "Carmen," "Beat the Retreat" and "Sam's Medal," the last two to be released shortly.

"FOREIGN ACE"—Non-de-plume of lighting cameraman, with a big reputation both in England and his own country.

J. C. GEMMELL—Vice-President, A.C.T. See "Who's Who of Vice-Presidents" elsewhere.

KENNETH GORDON—Vice-President, A.C.T. See "Who's Who of Vice-Presidents" elsewhere.

F. GEORGE GUNN—Studio Technical Supervisor, Gaumont-British Picture Corporation, Ltd.

ALFRED HITCHCOCK—England's premier director. Productions include "Blackmail," "Juno and the Paycock," "The Skin Game," "Waltzes from Vienna," "The Man Who Knew Too Much," "Thirty-Nine Steps," "Secret Agent" and "Sabotage." At present with Gaumont-British, for whom last four films were made.

PAUL HOLT—Entertainment Editor, "Daily Express."

ERNEST IRVING—Musical Director, A.T.P. Studios, Ealing.

ADRIAN B. KLEIN, Major—M.B.E., A.R.P.S., Technical Director, Gasparcolor Ltd.

TO THE YOUNGER TECHNICIANS . . . .

What I write here is advice—advice to those on whom this British Film Industry will ultimately depend—the junior technicians. This advice I temper with a caution. I warn them that one of the biggest dangers that will affect our film industry of the future lies in the overhastiness of themselves. I have noticed in the last two years their attempts to run before they can walk ; their hot-headed attempts to light a set before they have learnt to pull focus. Youngsters are even aiming at becoming directors long before they are equipped for it, and it is to this state of affairs that I call the attention of the industry.

If we wish to compete in the race for motion-picture glory, we must have knowledgable men. We must have technicians whose general film knowledge will render them independent of the faultiness and alibi-ing of the various departments of the business. We must have men who will have the commonsense to forge ahead with their job, unhampered by the petty annoyances from less efficient branches of the business.

It took me six years of progressing from one department of film production to the other till I felt I had enough film knowledge to become a director. Even when I had gained the director's chair, I felt I was there by proxy. I knew I still had a great deal to learn.

This point I desire most earnestly to drive home to our junior technicians—If they come into this business they should bring with them a thirst for general film knowledge. They should not be bounded by the sphere of their own department. When a young camera assistant finds himself idle, let him pay a visit to the studio art department and glean a little knowledge on the business of evolving a setting. Let him wander into public art galleries and from the famous paintings of the world study the laws of pictorial composition. His cameraman's life-to-come should not be spent in imitating other men's ideas. He should evolve his own.

Similarly a junior in the Sound department should keep himself alive to the huge possibilities of observing sound. His early studio life should not be entirely centred on pulling microphone strings. When in years to come he may be called upon to produce the roar of passing traffic, that sound to him should not be simply a roar. His knowledge gleaned through the years—his observation on sounds—should enable him to know exactly what comprises the sound of traffic and what component parts in that everyday sound have the most dramatic value.

Hollywood steals a march on us daily through the progress of her junior technicians. The interchanging of studio staffs is common business. A boy's knowledge is for ever on the increase as he climbs towards his ultimate position. He begins to know how a set is built, how it is painted, how it is dressed. He discovers the difficulties of sound, camera and electricity. He knows how a scenario is composed, how a film is cut. He learns the methods of

FADE IN

start of another. We have given them a free hand to say exactly what they like. Of course, what they say does not necessarily express the views of the Association but we are confident that such a frank exchange of views is beneficial to the industry. It is in that spirit that the following comments are offered.

Contributors

BERNARD KNOWLES—Chief Cameraman, Gaumont-British. Recent pictures, "Thirty-Nine Steps," "Rhodes," "Secret Agent" and "Sabotage."

ALAN LAWSON—Chief Cameraman, Baird Television Ltd.

LEN LYE—Experiments with colour movement. Films include "Colour Box" and "Rainbow Dance" (for G.P.O.), "Kaleidoscope" and "Birth of a Robot."

WALTER MEADE, Major—Scenario Editor, A.T.P. Studios Ltd.

REG MORTIMER—Film critic, "Empire News."

GEORGE MUNRO—Film critic and author of "Murder Gang," now in production.

G. H. NEWBERRY—A.C.G.I., B.Sc. (Hons.), D.I.C. Chief Sound Recordist, Pathé Pictures, Ltd.

C. J. PHILLIPS—Technical Assistant to Manager, Pathé Laboratories. Chairman, A.C.T. Laboratory Section.

LEWIS PROTHEROE—A.R.P.S. Free-lance still photographer, at present with National Provincial Films.

JOHN RAMAGE—Film critic "Reynolds' News."

PAUL ROTHA—Realist and Documentary Director. Member of Associated Realist Film Producers, affiliated to A.C.T. Directed "Contact," "Shipyard," "Face of Britain," etc. Author of "Documentary Film," "Movie Parade," etc. Director of Productions at the Strand Film Company.

PEN TENNYSON—Assistant Director at Gaumont-British, where on recent productions with Victor Saville and Alfred Hitchcock.

G. E. TURNER—Managing Director, Publicity Films Ltd.

C. A. W. (Charles Arrowsmith Walker)—Film critic of "The Cinema."

ERIC WILLIAMS—M.J.Inst.E. Chief Recordist, A.T.P. Studios.

LAURENCE P. WILLIAMS—A.R.I.B.A., A.A.Dip., Consulting Art Director, Pinewood Studios. Supervising Art Director, Herbert Wilcox Productions.

publicity; the routine of studio management. His general film-knowledge, thus acquired through opportunities offered to him by Hollywood methods, renders him a master technician—master of his own job, conversant with those of others.

The future of our industry lies in the juniors. Perhaps it is because they may have realised this that these boys are scampering ahead too fast. Or is it that our studios do not give them an opportunity to probe into the methods of other departments? Are the doors of a cutting room shuttered against the enquiring young camera boy? Do our scenario chiefs look with a sneer on the efforts of an assistant director to seek the secrets of their craft? I say to junior technicians of Britain, make these opportunities for yourselves! Seek out this film knowledge; know what the other men do round you. Strive to amass the facts of film-production, so that when in later years you are called upon to make your own technical decisions, you can make them independently, secure in the knowledge that what you say is right.

Alfred Hitchcock.

A YEAR OF PROGRESS

THE technicians at last have a well-represented body to express their thoughts and complaints in an orderly and civilised manner to what has proved to be a sympathetic ear. . . . very good for both employer and employed.

Lighting experts this year have enjoyed the use of the new American scientifically designed lights, both blue and yellow, resulting in an immense increase in control and efficiency. The decade of the naked mirrored light of both kinds is rapidly passing away . . . at best they were never more than a bad modification of flood lights. Modern film, wide aperture lenses, and advanced developing technique can no longer tolerate large volumes of spill light. Next year will show more control of lighting equipment and, one hopes, a greater variety. The year has seen great all-round advances in negative treatment. Progress in positive printing, due largely to the excessive cost of latest printing devices, has virtually come to a standstill. Every other cartoon about December shows "New Year" as infant with bag of good things for waiting world. Well, lighting men want printing machines that will render not less than 75% of the quality present in the excellent negatives now being made. Bad prints are no cheaper than good ones. Hope naked infant is listening.

Co-operation between film manufacturing concerns and lighting men who use their product still very ragged. One looks to *A.C.T. Journal* to publish latest research findings as easiest and most universal method of disseminating information.

Year rapidly closing has shortened distance between our best product and foreign equivalent more than any two previous years. This year greatest British company made genuine inroad with domestic product into U.S.A.

market. Americans kind to meritorious features, somewhat harsh with second or as they call it, Class B product.

Fair enough.

By and large, definitely a year of progress.

Bernard Knowles.

TELEVISION MAKES ITS DEBUT

As Television has now made its public debut, after a long round-the-corner period, all that remains is to explain exactly what is required in the new industry.

It is claimed that Television introduces a new technique. This statement seems to me "highly imaginative." As a fact, the method used in Television is that which was employed in the early talkies, especially the musicals. You have long shots, mid-shots and close-ups, as before; the same lighting has to make do for the lot. What makes it more difficult still, there is no chance for a "re-take" in Television. That factor makes Television a more exacting job than the talkie.

For that reason it is essential that, to obtain the most effective results for television fans, only first-class technicians who have had experience in film technique should be employed.

As to what will be the future of Television, in a serious journal like this, I know tipsters are barred. But I can foresee, when the novelty of "seeing by radio" is worn off, that a still more exacting standard of entertainment value will be demanded. It is up to the B.B.C. to see that a higher grade of production, using film as a medium, is followed—specially written scripts, expert camera set-ups and editing that expresses the highest possibilities of television.

Its immense possibilities are such that it ought to command the services of every grade of worker in the Film Industry.

Alan Lawson.

THE MIXTURE AS BEFORE

There has been nothing very progressive in the English film-music of 1936. Opera lovers who hoped for great developments to follow the success of "One Night of Love" have been disappointed, as producers seem satisfied to reproduce—"the mixture as before."

The Tauber musicals made by Capitol have content of merit, as was to be expected, the star being an expert musician as well as a fine singer.

Gaumont-British have shown Jessie Matthews in "It's Love Again," a first-class light musical and A.T.P. have marketed a successful Gracie Fields back-stage story, "Queen of Hearts."

There have been notable attempts to use background and atmospheric music by English symphonic composers, but there is an intrinsic difference between the development of a symphony and that of a film, and the gulf has not yet been bridged.

A bold attempt was made by Basil Dean to popularise the mighty Mozart in "Whom The Gods Love." High hopes were raised by the preliminary publicity of "The Robber Symphony," but it turned out not to be a symphony at all, but just a collection of simple and engaging tunes.

An example from Holland of good symphonic "atmospheric" music was "Dood Water," the Dutch Zuyder Zee picture, recorded by Mengelberg, with the Concertgebouw Orchestra.

Technically, the most interesting things that have come under my observation are two R.C.A. improvements in the recording system. The first is the use of the ultra-violet ray in the sound-camera, thereby securing greater clarity of definition in the sound track with corresponding improvement in the laboratory results, especially in high frequencies. The second is the "Push-pull" system of modulation which, though unavailable for cinema projection owing to the double scansion necessary, is invaluable in the studio because of its faculty of eliminating background amplification when mixing tracks.

Ernest Irving.

COLOUR CONSOLIDATES ITS POSITION

In so far as the colour film is concerned, the past year has not been remarkable for any outstanding technical advance; it has been characterised rather by a consolidation of the position so far reached. Thus Technicolor have spent the last twelve months completing their elaborate plant on the Great West Road, which should be ready for processing films early in 1937. The first feature film to be made in Technicolor in British Studios has been completed at Denham. Gasparcolor have continued their production of advertising films, in which class of film they have indisputably opened up new territory; while the general quality of their product has shown steady improvement. Next year we shall see what this process can accomplish in studio production.

D. C. DICKINSON
CAMERAMAN

AVAILABLE FROM
JANUARY 1st, 1937

Demonstrations of some two-colour processes have shown that economic considerations have not yet made such processes entirely obsolete. Among two-colour systems are Ondiacolor, Harmonicolor, and British Chemicolor. "Additive" systems are still fighting their gallant battle against well-nigh insuperable odds. The British Realita Syndicate showed a film publicly in London, and related firms have exhibited in France with some encouragement. From Germany comes the report that the lenticular film is being powerfully supported by Siemens and Halske. More may be heard of this solution to the problem.

So far, the Technicolor process still dominates the situation, and it has been used for several American productions of the first rank. The results, although in many respects open to criticism, are a clear warning to the trade that colour is steadily gaining ground.

At the present moment the greatest enemy of the colour film is the user of it. Several years may pass before we shall discover the right men to create colour films. Of one thing we may be sure, the production personnel will have to be new throughout—new stars, new directors, new camera men. During the coming year there is every reason to expect that the percentage of colour films made will show a marked increase. Let us hope that the industry in this country will have the intelligence (or if they have not, that they may be forced) to employ British artists and British technicians in this promising new aspect of motion picture technique.

Adrian B. Klein.

BIGGER AND BETTER PRODUCTIONS

THE most outstanding features to me about the Industry during 1936 have been its enormous growth and "bigger and better" productions. This seems to have come so suddenly that I wonder if the British public have yet realised that they can go with confidence to see a British "epic." I know that, as far as I am concerned, it does not seem so very long ago since I used to feel thoroughly downhearted nearly every time I saw a British production, mainly because there appeared to me to be so many needless technical errors; but the standard of the productions I have seen this year has considerably lightened that load of depression and I can only say now, that if the mistakes are still there, then the production on the whole and the entertainment value is so first-class that any technical errors pass me unnoticed. It does seem to me too, that the industry as a whole is on a more sensible production basis and during this year there seems to have been a steady flow of work for the free lance instead of those few quiet months, that we all know so well, followed by the mad rush later with several good jobs all coming together.

On the floor I have felt strongly that directors have learned to use the full services of their technicians who have assimilated more technical knowledge and have acquired that invaluable gift of co-operation.

In conclusion, I would add that it seems a pity we still have to import directors for some of our big productions, and one can only hope that with the ever-increasing experience of our own technicians the day is not too far distant when we shall be able to look amongst our own ranks for directors, etc., to whom we can give these "plums."

Jo Backhouse (Jo Josephs).

ASSOCIATED REALIST FILM PRODUCERS

33 SOHO SQUARE, W.1 GERRARD 2484

EDGAR ANSTEY
WILLIAM COLDSTREAM
ARTHUR ELTON
MARION GRIERSON
J. B. HOLMES
STUART LEGG
PAUL ROTHA
ALEX. SHAW
EVELYN SPICE
DONALD TAYLOR
HARRY WATT
BASIL WRIGHT

During the past six months A.R.F.P. Members have directed the following films:

The Nutrition Film	Edgar Anstey
On the Way to Work (Strand Films)	Edgar Anstey
English Items for March of Time	Edgar Anstey
Fairy of the 'Phone (G.P.O.)	William Coldstream
Cover to Cover (Strand Films)	Alex. Shaw
Work Waits for You (Strand Films)	Alex. Shaw
Party Dish	Arthur Elton
Scratch Meals	Arthur Elton
Some Methods of Aeronautical Research (Strand Films)	Arthur Elton (Producer)
Country Fare (Publicity Films)	Evelyn Spice
The Saving of Bill Blewitt (G.P.O.)	Harry Watt
English Items for March of Time	Harry Watt

TECHNICAL CO-OPERATION ESSENTIAL

When we speak of a film as technically interesting, we are often unconsciously making an adverse criticism. We often mean a film in which the technical excellencies and devices draw attention to themselves and that is a form of bad technique. For technique after all is only the answer to the question "How ?" And the best answer is the least obtrusive. Film-making has so many separate departments each with its own technique that a technically perfect film is necessarily rare. And each department is, or should be, subordinate to the telling of the story. From this there sometimes arises technical clashes between departments and the technician has to learn the difficult but necessary lesson that sometimes he must sacrifice apparent technical excellence in his particular department to the good of the whole. For instance, the camera-man must forego those Madonna lilies tipping into the left corner of the picture. True they make an attractive composition, but in this scene that is just what is not wanted. An attractive composition inevitably draws attention to itself and in this scene the whole of the attention needs to be focussed on the actors. Incidentally, does any one remember an interesting shot, qua shot, in any Chaplin film ? I believe that is because the element of supreme importance in every scene is the figure of Chaplin himself and nothing—not even a lovely shot—must distract us from it. The supreme technique of film-making lies in the co-ordination of the separate techniques of individual departments. And this can only be brought about by sympathetic co-operation. A film can be beautifully photographed, admirably recorded, powerfully acted, and yet be a technical failure because these elements do not fuse into a whole or forward the story. For in the end it is the imaginative technique of telling the story that must be supreme and technical blemishes which do not seriously interfere with this are of minor importance and that is why speaking as a director, "Mr. Deeds" seemed to me the best technical achievement of 1936, though in no individual department did it break new ground or was even outstandingly good.

Anthony Asquith.

A DISAPPOINTING YEAR

This has been a disappointing year for British films. Though the equipment of some of our studios is now equal to the world's best, our most ambitious efforts are still below those of America, Germany and France. Among the outstanding productions of 1936, I can see only one in the first ten. That is "The Ghost Goes West," which I would place fourth after "Romeo and Juliet," "Modern Times" and "La Kermesse Heroique." In the first twenty pictures, there is nothing else British.

In secondary pictures, we have held our own, many of the thrillers and comedies being quite excellent. But all the big pictures, with the exception of "The Ghost," have been amateurish by comparison with their foreign equivalents. Largely the faults (to an untechnical critic) are in the scenarios and the casting, principally the latter. The plots have been woolly, and the editing gawky, and some quite incredible people have been given the leads. I could name three young women, but will refrain, who have been "starred" in costly pictures, and whose talent and personality do not justify more than walking-on parts.

Why should this be, when we have more fine actors than any country except France, and an abundance of native dramatists ? The secret of the general inefficiency is in the capture of so many key positions by an army of foreigners who have blown into the industry on a whirlwind of ballyhoo and who are great artists in only one thing, self-advertisement.

John Ramage.

MORE TECHNICAL CREDITS WANTED

Most satisfactory A.C.T. feature of '36 the consolidation of membership—the rough cut is finished and we're beginning the final trims. Must continue to stress the importance of the men who make the film ; would like to see trade press list technical credits in their reviews (as the Americans do) so that bouquets and kicks can reach the technicians they're intended for. The boys don't mind the kicks and they'd like to take a bow occasionally. Also hope the *Journal* may be able to issue complete list of A.C.T. credits on all films made during previous year.

Technically, year has shown slight tendency to have more lengthy set-ups and less cross-cutting. This may develop, but is dangerous except where players can really carry long scenes. Growth also of having editor standing by on floor with director throughout production—habit to be encouraged. Colour will perhaps be more important problem in 1937 ; has as yet scarcely touched the British technician. Hope increased use will not be excuse for importation of too many foreign technicians—British technicians must be fitted for working on colour at every opportunity. New problems colour is bringing should receive earnest attention of A.C.T. educational committees.

Sidney Cole.

SCENARIO'S BIG CONTRIBUTION TO RECENT SUCCESSES

The past year has seen some notable films, and it is particularly interesting from the scenarist's point of view to see how greatly the scenario has contributed to the success of these pictures.

More interesting still is the fact that success has been attained by scenarios that differ wholly in type.

"Mr. Deeds Comes to Town," one of the very best of its kind, has been excellently served all round. It is a highly polished performance, and the dialogue is admirable. But the picture's triumph does not depend on its dialogue.

Now take the other side. "The Petrified Forest" is a picture of the static type, entirely successful and full of dialogue. This picture gives the lie to those who maintain that a script full of dialogue is not only reactionary but doomed to failure.

It would seem that the screen is catering to both eye and ear, and is beginning to gauge the compass of public taste in both directions.

It is the picture that above others should stimulate our dialogue writers for—when all is said and done, and heaven knows a lot is said in picture-making but comparatively little is done—the actual continuity over which scenarists frown and pore is, and quite rightly, at the mercy of the Director. The tendency is toward writing the script in master scenes and leaving the ultimate breaking down to the director and his assistants—again a decided move in the right direction.

Simplicity is coming into its rightful own, and for this all our thanks are due.

Walter Meade.

C. J. Phillips

Laboratory Technician

Pathe Pictures Ltd.

Edward Dryhurst

15 Tudor Close, London, N.W.9.

Scenarist, Fox British Pictures Ltd.

Recent Assignments (all for Fox):
"The End of the Road" (Harry Lauder)
"Strange Experiment"
"Double Alibi"

Colindale 6166.

Sidney Cole

Film Editor

Last Productions:
"Lonely Road" (A.T.P.)
"The General Goes Too Far" (Fanfare Pictures)

c/o A.C.T.
Gerrard 2366.

Pat Knight

Second Assistant Director
Assistant Stage Manager

Recent Pictures include:
"Toilers of the Sea" (Beaumont Productions)
"End of the Road" (Fox-British)
"Full Speed Ahead" (Huntington Productions)
A.S.M.: "Front of House" (Arts Theatre)
Fluent French

Ortygia House, Harrow, Mdx.

Byron 2912.

Harry Hurdell

12a Crescent Rd., Kingston-on-Thames, Surrey.

Assistant Art Director

Recently on:
"A Woman Alone" (Garrett Klement)
"Dusty Ermine," "The Spy of Napoleon," "The Man in the Mirror" (J. H. Productions).

O. N. Morris

Camera Operator
(all types of camera)
Fox-British

157 High Street, Ruislip, Middlesex.
Ruislip 2338.

Curtis Reeks

Free-Lance Still Cameraman

Complete Equipment

Last Production:
Jessie Matthews in "Head Over Heels" for Gaumont-British.

15 Claremont Avenue, New Malden, Surrey.

Alan Lawson

3 Brim Hill, London, N.2

Cameraman
Film and Television

R. H. Morris

157 High Street, Ruislip, Middlesex.

Camera—First Assistant
(all types of camera)
Fox-British

Ruislip 2338.

Jeff Seaholme

Operative Cameraman

A.T.P. Studios.

Best Wishes to All

DILLY

Ted Hunter

Film Editor

"The Crimson Circle," "Gaolbreak," "The Secret of Stamboul."

Kenneth Gordon

Vice-President, A.C.T.

Cinematographer
All branches of Cameracraft

Brixton 6033.

Ernest Irving

Musical Director

Associated Talking Pictures,
Ealing Studios, W.5.

T. S. Lyndon-Haynes, A.R.P.S.

First Assistant Recordist
(Mic. Boom Operator)

A.T.P. Studios Ltd.
Member, General Council, A.C.T.

S. Raymond Elton

First Operator and Exterior Cameraman

At J. H. Productions with Curt Courant.

Elstree 1584.

Gunther Krampf

Lighting Expert and Chief Cameraman

Gaumont-British Corpn.

4 Valencia Rd., Stanmore, Middlesex.

Stanmore 859.

PUBLIC NUISANCE No. 1.

WHY is the Still Photographer considered "Public Nuisance No. 1" on the set? Surely the man who is responsible for all the pictorial publicity of a film, the show outside the theatre, which can and does attract and draw in the paying public and, of even more importance to the distributing firm, supplies their travellers with pictures sufficiently attractive to obtain orders from Renters and Exhibitors—surely I say, this man and his work should be taken a little more seriously by some directors and their staffs.

Personally I feel that the remarks passed to and about the Still Photographer are jokes, and I take them as such. I don't know who started them—that is lost in antiquity. I have, however, heard of cases when the treatment of poor old "stills" has been so thoughtless as to be discourteous, and I do feel that this sort of treatment should be discouraged.

It should always be remembered that we "less than the dust" people have our job to do and most of us are conscientious workers who like our work and are trying daily to raise it to a higher level both technically and artistically.

I must say, from years of experience, that I have more often found courtesy and help from directors and their assistants than the reverse, with the result that time, the chief factor, is saved, results are better, and there is a general feeling of good temper among all concerned. My brother "stills," I am sure, can support me when I say that work is a pleasure on a happy film and every film should be that, because *the work is then improved.*

Greetings, good wishes and happy hunting to all in this business of producing the most popular form of entertainment and enjoyment—The Films.

Lewis Protheroe.

HIGH GENERAL STANDARD MAINTAINED

FROM the Art Directional angle the year 1936, like most others, is distinguished mainly by the high general standard that has been maintained. In the only two cases of technical advancement of which I am aware, British film producing concerns took their part.

In the first case, for the "Dark Angel" (U.A., Richard Day, Art Director) the British and Dominions' Art Department co-operated with the American Art Department in the collection of material for the reproduction of British railways and railway stations of the 1914 period and of suitable wartime posters, etc. It is to be hoped that co-operation of this nature may be extended in the future between film producing concerns not only of different continents, but between those of individual countries.

The second concerns the 20th Century-Fox production of "As You Like It," in which the Art Director, H. L. Meerson, employed for the first time in this country, at any rate for a number of years, the extensive use of building in perspective. The results upon the screen amply justify the great labour and ingenuity that must have been employed.

What is, however, of much more importance to British art directors than any technical advances directly concerned with production is the fact that during the year four new studios have been under construction in this country, two of which have now been officially opened and production started within the last few months. The construction of and facilities provided by these new studios disclose a new and brighter future for all British technicians, and from the Art director's personal point of view the comforts with which they are provided in these new plants make their existence of even a year ago almost primeval in comparison. These added facilities will, one is confident, be reflected in the work produced in future years.

Laurence P. Williams.

ON THE THRESHOLD OF OUR BEST YEAR

GENERALLY speaking, I think that the year 1936 will be remembered by all members of the film trade as one of the most ambitious and important periods in the life of British films.

The most outstanding event has been, of course, the construction and opening of two of the world's most modern studies, at Denham and Iver respectively. These studios, together with others to be completed in the near future, are equipped with the most up-to-date apparatus, and have every facility for the carrying out of the bigger production programmes now being planned.

More pictures mean a greater demand for staff, and cameramen are now at a premium. The influx of foreign *ace*-cameramen has not been detrimental to our British cameramen; on the contrary, it has brought to our studios fresh ideas and a higher standard of technique. Men working with these foreign experts have had the opportunity of perfecting their knowledge of their job; thus not only does the individual benefit from this contact with men who are at the top of their profession but, indirectly, British films will reflect the influence of these ace-technicians, in the work of our cameramen which already, during the past year, has taken a notable step forward.

And now to turn from expert cameramen to those who are only beginners at this branch of the film industry. I

STILL] [CURTIS R

From "HEAD OVER HEELS," a Gaumont-British Picture with Jessie Matthews, directed by Sonnie Hale.

refer to those clapper-boys and very junior assistants who have often little but their enthusiasm to commend them. Before it is too late, studio executives must realise that among these boys are the cameramen of the future, and that some day, in the not so far distant future, they will be needed.

Yet, with the exception of a few companies, no effort is made to help these boys to learn their job—their salaries are, quite understandably, low, but the worst of the matter is the insecure positions they occupy in the studio. They start in the industry full of optimism; they cannot live on what they earn, so, with the exception of the very few with private incomes, they remain with their parents until they shall have obtained that experience which will enable them to command salaries sufficient to support them entirely. But more often than not, you will find that after one or two pictures the parents will interfere, complain of the irregularity of these film jobs, which appear to consist of two months' work and three months' searching for more work, and our cameraman of the future will be put into a bank, or into some other job promising him a steady, if small, income.

I am convinced that many of these boys should be kept in the trade, and my suggestion is this—that each company at the conclusion of a picture should pay the most promising assistants a small retaining fee. The boys retained at this salary would be obliged to fill in the interval before the next picture by attending classes dealing with every branch of the cameraman's work. These classes would be organised by the A.C.T. and, for financial purposes, might also be open to the general public.

I think that this idea, developed in the proper way, might prove of great advantage in solving what threatens to become a very definite problem in the studios to-day, and I feel sure that studio executives would co-operate readily.

In the meantime, however, the British film industry is on the threshold of one of the best years ever, and we cameramen are ready for it! So here's to 1937.

Bernard G. Browne.

SQUAWKS AND STAR GAZERS

1936 is leaving us. By the time it does, some headaches will be eased, some projected into 1937. This year's production boom burst in upon us before you could say Jack Robinson, took us off our balance and left the studios gasping for experienced technicians. Every Tom, Dick and Harry who had an urge to gaze at the stars at work attempted to crash technical departments, and often succeeded. They came through channels of influence, waving their old school ties and advancing to responsible positions. It dawned too late on studio executives that the star gazers cost productions more money than headaches, but that isn't to say the headaches weren't there. Watch out for that showdown in thirty-seven, when the fittest will survive and technical responsibilities will pass out of dilettante hands.

The old proverb: "Penny Wise—Pound Foolish" is exposed in the fact that the new studios, making an advance in production quality in the matter of lighting equipment, have failed to do anything about new and better cameras, so the artist has been supplied with paint but refused brushes. Which confirms my theory that film economy as it stands is good clean fun, but little else.

And talking about film economy brings to my mind the Great Squawk that happened some time ago in regard to the salaries paid to lighting experts in England. I shall always say that these particular men are the lowest paid relatively to the good they contribute; why do stars like Garbo, Colbert, Dietrich, Shearer, Davies and others have the clause put into their contracts that they shall have a say in the choosing of their lighting experts? Since it can't be for their good looks (and I mean positively!) it must be for the simple reason that these men produce a high quality of work which assures the star that they will be photographed in the most glamorous manner and one that will prove a vital factor in selling the film to the public.

I could go on for pages on this subject, but all these executives who squawk about the technicians' high salaries

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might explain instead why productions in London cost three times as much as the Hollywood ones, when the salaries of everyone concerned here are a third of those of the Americans.

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STANDARD OF NEWSREELS VASTLY IMPROVED

Complaints, usually trivial and mostly local, are sometimes made about the newsreels. The most consistent is that major stories are too short and the minor ones are nine times out of ten not worth publishing. The standard of newsreels has improved beyond all expectation in the past few years. The advent of sound has been accepted in such a way by technicians that nowadays exhibitors expect to have natural sound on all stories, minor or major. A well-known exhibitor put the following point to me some time ago: "Why impose a commentary on a story which has natural sound, adding comments which are absurdly obvious and therefore unnecessary. Each company has distinctive ideas as to the importance of commentators, but the fact does remain that this commentary business is a little overdone. You may have the finest commentator in the world, but that has little value if you haven't got the picture. The newsreel cameraman and sound recordist are undoubtedly the most versatile in the business. Whatever the conditions, circumstances or difficulties, the story *must* be put on the screen. There can be no alibis. No offence to our studio confreres, but a newsreel man *must* be right first time. There can be no retake. The percentage of failures is negligible. For this we are largely indebted to the wonderful work of the opticians engaged in the manufacture of lens. Extraordinary results have been obtained with their exceptionally long lenses from 40 to 17 inch focus. For example, the photography and sound were perfect on the reels of the King's speech to the Guards in Hyde Park. Yet no cameraman was nearer than 150 yards.

During 1936 the companies combined to oppose competitive bidding for exclusive rights. This was a great compliment to news cameramen who had so successfully "pinched" during recent years, as, by their fine efforts and results, the holders of rights realised it did not pay them to expend large sums on exclusive rights which they could not possibly hold against the ingenuity of rival cameramen.

The technique, resource and ability of newsreel cameramen and recordists was never better than it is at the present moment. The millions of people who see our newsreels each week will be able to view in comfort next year that which they would otherwise possibly not see at all—the pageantry of Coronation Year, 1937.

J. C. Gemmell.

Cover Design

We hope you have been struck, as we were when we first saw it, by the originality of the special cover design for this issue. It is the work of Shamoon H. Nadir, A.C.T. member and Art Director of London Films.

Thank you, Shamoon.

INCREASE OF BRITISH-TRAINED TECHNICIANS

A.C.T. has asked me to make comment on the advance made by technical men.

I'm always scared of technical men. The technical "side" of anything gives me nightmarish feelings—this much I do say, as a reporter, it has ever been my experience on a story that the technical man—never the high-powered fellow who hands out the cigars and champagne—is the man who knows facts and gives the real story. (Alas, facts in these days are never a necessary corollary to the story !). The fact that most impresses me about the British industry, and I now write as one of the bob-a-nob crowd, is that when the serial starts going, names of producer, scenarists, librettists, the man who pays the blondes, there is an increasing number of British-trained technicians.

The Yes-men used to tell me, "It must be good—the camerman comes from Nischi-Novgorod; the lighting is by Herr Thomas R. Krinski." Now they say "Bill Robinson and Charlie Smith are on the technical side."

The advance of British films in two world markets owes its origin and continuance to the progressive ambition of the technical men. That is a fact that is self-evident.

George Munro.

THE REALIST FILM ADVANCES

On all fronts, 1936 has been a year of consolidation for the realist and documentary film. Individual achievements have not been so spectacular as in previous years, but a firm basis for production has been established. The movement has now grown strong and big enough to have movements within itself. Not the least significant move has been the consolidation of all documentary personnel into the Associated Realist Film Producers' group, affiliated to the A.C.T. Within the group itself, various tendencies have become separated. The "March of Time" has, with the aid of British realists, become more settled and profound in its statements, both the Tithes and Football Pools items being shot here. Social documentary sees Anstey's "Nutrition" film carry forward the style of reporting initiated in Elton's "Workers and Jobs" and "Housing Problems." At the other end of the front, Shaw's "Cover to Cover" takes the impressionist-cum-interview method to a stage where it achieves a healthy theatre release. Coldstream's "Fairy on the 'Phone" reveals the first comedy director in documentary. The progress made by Strand Films in its first ten months shows that good documentary can be made on a sound economic basis. While behind all this production there is steadily going on development in the all-important non-theatrical field. Next Spring should see some significant moves in this direction.

The year started well with Watt and Wright's "Night Mail" and the future looks as if there will be plenty of films to make. After a year of stocktaking, realist films will move forward into the realm of second-features for the theatres and into the field of civic education in the non-theatrical market. New personnel are being trained, at the G.P.O. and at Strand, none the less rigorously than in the old E.M.B. days; new sources of production are coming forward and new kinds of realist film will be developed as the cinema becomes more and more an integral part of our social and political life.

Paul Rotha.

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A GOOD YEAR FOR MOST OF US

During 1936 Assistant Directors have probably been more acutely aware than any other technicians of the state of flux through which the industry is passing. Although like others they have to some extent benefited from its expansion, the appearance of new studios and the fluctuating plans of production concerns have led to increased instability in organisation and conditions of employment. At one time the A.C.T. employment bureau had as many as 30 unemployed assistants of various grades on its books. This position has not been helped by the intrusion of many more or less talented amateurs into a field of work in which there is no substitute for experience, as the Director said to his assistant when he scheduled the leading lady's bathing scene for the wrong date.

However, the A.C.T.'s rate of expansion has been at least equally rapid. Although Assistant Directors as a class have not been as quick as other technicians to realise that their best chance of procuring stability in salaries and working conditions is by supporting the Association in its work. This in spite of the fact that nobody in the business works such long hours for such varying salaries as Second Assistant Directors.

Nevertheless, 1936 has been a good year for most of us, and we can but hope that 1937 will show an equal advance both in the A.C.T.'s work and in the Industry as a whole.

Pen Tennyson.

RECORD YEAR FOR PUBLICITY FILMS

1936 has been a record year in the production of publicity and propaganda films. Not only have we made far more films than in any previous year, but the standard of production has improved out of all knowledge.

This improvement has only been made possible by the high standard of efficiency maintained by our technical staff. In this connection I want to pay a tribute to the A.C.T. which, during an unprecedented rush period, never failed to supply us with men of high calibre.

I was pleased to read in a recent publication your secretary's statement that in his opinion the use of the film for propaganda purposes should not be restricted. I thoroughly endorse that view. After all, the printing press suffers from no such restriction. Why should the most modern method of disseminating propaganda be bound by prejudice ?

The job of my company is to provide film propaganda for industry. This is an undertaking which is, I know, welcomed by the leaders of the cinema industry, since nothing but good can come out of a close association between them and the other great industries of this country.

G. E. Turner.

REDUCED RECORDING COSTS

There has been a good deal of discussion during the year about the steadily increasing cost of production, but it does not seem to be generally known that the cost of recording a picture has, if anything, fallen during the last few years, due partly to technical improvements and methods which speed up working, particularly on musical pictures, but mainly to the objective view of production that the experienced recordist takes nowadays. He co-operates smoothly with his fellow-technicians, knows when to give and take and still get a commercial result, and on the rare occasions that he makes an error of judgment, usually has a trick or two in reserve to put matters right without an expensive retake.

With regard to recording practice, I was very interested to see in one studio, lightweight portable equipment being used on the stages. This is definitely a step in the right direction. In my opinion the development of sound recording apparatus for use on sets in and out of studios should be towards providing light and mobile gear that could be moved around and set up ready for taking with the same speed and facility as an ordinary motion picture camera.

With such equipment any type of shot could be covered, including several different camera angles on big spectacular scenes. Working in conjunction with this portable apparatus one would have, of course, a permanent studio installation for use in connection with mixing effects, music, and re-recording of all kinds. This plant would perform the same functions for the production recordist, as the optical printer does for the cameraman.

We have not yet reached this ideal, but I am confident that it will be standard practice in a few years' time.

F. George Gunn.

NEWSREELS SHOULD TAKE CHANCES

Kenneth Gordon, who is all of the Three Musketeers of British cinematography, but more particularly Porthos, suggests that I should give my opinion of the standard of camera work in this country. That is simple. I have never known it so high. A great deal of publicity is given to brilliant foreigners like Georges Perinal, but to my mind their work is not half so significant as the day by day work being done by the British newsreel men. It seems to me that it is relatively easy to take a good and impressive picture when you are allowed a day to light the scene, but it is not so easy when you hoist a camera up on to a rickety tower in a gale to catch the Grand National horses as they come by. Particularly if some benevolent gentleman is pulling at the guy ropes of the tower the while. The result may not be high art, but it is darned good craftsmanship.

Only one thing worries me. I get the impression sometimes that newsreel cameramen in this country are afraid to take a chance. I have seen the same thing happen time and time again in Fleet Street. (I used to be an Art Editor).

You send one man out to cover a wedding, and he will bring you back a safe picture. If you send one man out to get the best picture of the wedding and tell him he can leave the stock stuff to the agencies it is on the cards he will bring you back a front page picture. It seems to me that British newsreel cameramen are being sent out to cover a job rather than to get the best picture.

I think the standard of newsreel photography in this country might be improved 100 per cent.—not by the operators themselves, but by the news editors sitting behind their desks. If they would say to the men as they send them out, "I'll take a chance on missing this item altogether to give you the opportunity to get me just that one shot that is different from everybody else"—the problems of newsreel work would be halved. But they don't take that chance.

Paul Holt.

COMMENTATOR PREFERRED TO NATURAL SOUND

VERY few changes have taken place in the photographic and editorial personnel of newsreel companies. Though this may lead to a conservative outlook on new-fangled ideas and new gadgets it does help to maintain a regular standard below which it is fatal to drop. Always, in spite of breakdowns or hold-ups of any sort, the newsreel *must* be screened on Mondays and Thursdays. What changes there have been in personnel have been on the side of reductions. Sound engineers, leaving for better jobs, have not been replaced—due to the increase in the number of stories which are now covered silently.

The early days of Sound saw, at the most, four or five stories, with little or no commentary, making up the reel, but in 1936 we find the reel following the lines of a newspaper, being made up of several small stories with one or two predominating ones, and with commentary on them all. The fact that these small stories are now covered by the silent camera only means that the background behind the commentary must be made up of library noises, or music, or both. The outside newsreel engineer is, therefore, not half as busy as he might be, whilst the news studio engineer is considerably busier. The latter gentleman plays an important part in the production—quite an artistic job can be made of a poor story by the careful use of music and sound effects. A good imagination and a creative mind are essential.

Recording equipment remains practically unaltered this year. Where replacements have taken place, lighter and more portable gear has been the demand. The condenser mic. still holds its own, and whilst squeeze track has been tried it is an unnecessary refinement. This year has seen the introduction on the road of a new recording gear—the light-weight Visatone, designed by Captain Round.

1936 has introduced a lot of talk about Television, and its adaption for the newsreel, but nothing has yet happened. We will look forward to 1937, with the hope that Television may definitely enter the newsreel field. When this time arrives, maybe natural sound will return once more into its own, and the commentator can have a couple of days off.

G. H. Newberry.

BETTER AND BETTER EVERY DAY

THE technical quality of the World's Colour Cartoons for the past 12 months might reasonably be summed up in the words of Professor Coué—"better and better every day." The art of the camera is incorporated more and more with the art of the animator, exquisite effects of colour, speed with which innumerable situations are piled one on the other, all build up and make the onlooker almost gasp with wonder. Technical perfection—yes !—but have we seen anything very different ?

Here, perhaps, I may be allowed to touch on my own productions—the "Sam Series" in which, for better for worse, we have tried to break fresh ground—we are at least walking down our own street. The story value of my subjects naturally dominates the speed or tempo of the cartoon, but when leading into a monologue we sometimes get an opportunity of showing that we *can* get a move on !

My new series of Six Stanley Holloway subjects constitutes roughly our output for 1936, together with one or two Commercial Cartoons. Nineteen Thirty Seven, I hope, will prove that we are at least justifying our existence as a British enterprise.

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By the way, has it ever struck you that there is only one standard by which a British Colour Cartoon is judged ? —the American Cartoon !—which spells practically unlimited production costs which are probably covered before their cartoons even enter this country ! Secondly, an already established home on the British screen, advance bookings months ahead, and low rental charges for "Super" productions which forces the British animator to try and make a competitive Cartoon for as many hundreds as our cousins are spending thousands ! !

It's a tough proposition, isn't it ?

Anson Dyer.

IMPROVED SOUND EQUIPMENT

It seems a generally accepted fact that recording must improve as time goes on ! And hence the industry is apt to overlook the actual advances that have been made in the past few years, more especially in 1936, for technical progress has enabled sound to be a major component of the industry.

The unfortunate bugbear of microphone manipulation has been very considerably reduced in the Western Electric System by the introduction of their non-directional microphone, and the remarkable pick-up obtained from what were previously considered "impossible mic. positions" facilitates freedom in direction and lighting.

Further researches, using ultra violet light exposure, have enabled R.C.A. to market a new recording system which has gained the highest praise from technical and musical expert alike.

This year, too, has seen tremendous improvement in portable recording equipment so that "sound" can now join camera on all its missions and contribute its share to the authenticity of the modern film. To these improvements the laboratories have responded by installing the latest equipment available, and the new sound track printer, recently developed, completes a chain of apparatus which, together with many minor improvements in studio, laboratory and cinema, is indicative of the trend of "sound" achievements.

In the studio, the latest "technique" seems a tendency towards less dialogue and fewer longshots with dialogue, which, together make for swifter and smoother editing, thus aiding the illusion of the screen.

The advancement of sound is a fact—is it not also a measure of the progress of the whole film industry ?

Eric Williams.

DEAR CINE-TECHNICIANS

I don't envy you chaps. You are continually the butt for some wise guy of a so-called producer who is trying to put something over.

Take for instance all this yap-yap about colour. It is the film industry's worst stunt to-day because the fans definitely show no signs of wanting blue skies looking like an advert for Reckitt's Blue or trees of the colour that nature never designed.

I recently had a heart-to-heart talk with Jock Whitney, who, or rather whose money, was responsible for "The Trail of the Lonesome Pine." My chat with Jock happened before the film arrived over here. He tried very hard to make me go colour-conscious. I told him frankly that I was quite pleased with my celluloid fare being black and white. And I also told him that I thought most of my two million readers (The *Empire News*) were. But Jock said, or rather persisted, that I wait and see.

I did. And was there any sensation about "The Trail of the Lonesome Pine" ? At the time of writing this the general release of the film is on. I have not seen one mention in the advertising of this film to the effect it is coloured.

No, boys, I do not think you need to worry your heads over the future of colour so far as the fans are concerned. Writing week in, week out, for a big circulation, I know their reaction to these colour attempts. There is no demand whatever. The black and white still goes.

And that goes for Reg. Mortimer, too. Good luck, lads.

Reg. Mortimer.

A MEMORABLE YEAR.

From the laboratory standpoint, 1936 has been a memorable year. We have become for the first time a part, and an increasingly active one, of A.C.T. This Association has always made provision in its rules for the admission of lab. workers, but not until this year have they taken advantage of the fact that the machinery for the organisation of its workers was there waiting to be used. The lab. section has risen from numerical insignificance until to-day it represents more than 25% of the complete membership of A.C.T. Several important labs. are already 100% solid for the Association.

Technically the year has been interesting. The great new Denham Film Laboratories are now completely equipped, and, by the time this appears in print, should be in full production. Completely new types of developing and printing machines have been installed. The former, designed in Paris by M. Debrie, are novel, in that all operations are carried out in daylight, so that dark-room work for developing machine operators is abolished. The

STILL] From "HEAD OVER HEELS," a Gaumont-British Picture with Jessie Matthews, directed by Sonnie Hale. [CURTIS

machine consists of light-tight tanks made of a variety of bakelite, and the film is driven entirely by friction on rollers fitted with miniature pneumatic tyres. Naturally much attention has been given in this lab. to rigid sensitometric control, an essential which is at last becoming fully understood in this country.

Colour has been stirring uneasily in its sleep and several laboratories appear to have been experimenting with it. Technicolor have built themselves a fine new plant on the Great West Road, and we await with a great deal of interest the opportunity to compare their efforts with those of the American originators of the system.

Television has brought in its train many photographic problems, the most interesting of which, from our point of view, is that of ultra-rapid film processing. May one hope that one day an adaptation of this will be available for newsreel work ?

Sub-standard (16 mm.) printing is being handled by an increasing number of laboratories, able to undertake the photographic reduction of track as opposed to the earlier processes, which made it essential to re-record.

An interesting laboratory year has just passed. 1937 holds every promise of being even more progressive.

C. J. Phillips.

Message from Claude Friese-Greene

Mr. Friese-Greene writes to promise a contribution for our next issue. He adds : "In the meantime may I wish continued success to the A.C.T. and tell you how pleased I am to see its growth. I am certain the benefits it affords will become even greater and greater. If you will accept a Christmas wish for your Xmas and New Year issue, it is just a Happy Christmas, Success and more Technical achievements for the New Year."

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FILM MAGAZINE RECORDS.

Britain holds the championship for the longest run of the magazine type of film, namely the "Pathé Pictorial," which has been in continuous weekly circulation for close on twenty years and now ranks for quota. It features items of interest with variety items. This house also publishes the "Pathetone Weekly." This gives it the greatest number of reels, namely 104 thousand-footers per annum. If not highbrow, these films are definite entertainment, have a large circulation and have created quite a fan audience for themselves. The studio excerpts for these are made in the Wardour Street roof studio, under the production management of Fred Watts. The use of star comedians to compère the items is an innovation introduced during the year into Pathé reels.

From Gaumont we have the "G.B. Magazine" (formerly "Ideal Cinemagazine") whose studio excerpts are also made in the West End under the guidance of Andrew Buchanan, who has an original flair for editing which gives a documentary tone to these single reelers.

The "March of Time" has recently entered the lists. Published monthly, edited and supplied with subjects for home consumption, it can be described as an international economic and political encyclopaedia, rather than light entertainment. It makes audiences think, and in a plain way fairly depicts its subject by pictures and commentary, leaving the audience to give their personal verdict.

So much for 1936. What of the coming year ? I think conditions will remain about the same for the first six months. In the latter half colour may be introduced providing the costs of production are low and consistency and rapidity of processing assured. Many think that the

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competition of the documentary field may have an effect on magazine circulation, but personally I think there is room for both; one is educational, the other entertainment. The length of time taken to make documentary films allows more attention to production detail and cutting. This, I think, will be reflected in future magazine editorial policy.

Kenneth Gordon.

TECHNIQUE THAT MEANS ENTERTAINMENT

I AM not a technician. Indeed, seeing that on "The Cinema" I have to consider such diverging schools of thought as the producer, the renter and the exhibitor, many other labels may well be, and doubtless have been, applied to me. However, I myself say this—I am no technician.

Having thus amiably armoured myself against any critical come-back, I can proceed to give a very sketchy impression of the year's technical developments as they register with me—in terms of the finished entertainment. You know—the stuff that matters at the box-office.

As I have so little space in which to say so much, let me immediately emphasise that to-day first-rate technical qualities are taken for granted—surely a comprehensive commentary. Clearly the British craftsman has progressed in ratio to his equipment, and the exterior work of our cameramen, at least, invariably challenges comparison with that of his more highly-paid American or Continental confrere. Nor do I overlook the marked advance in cutting and editing, although here the craftsman has been frequently hampered by his material.

Recording, too, appears to have reached that phase when any lack of fidelity is a matter for startled comment, while for the art director my applause is positively tumultuous. No question of tools here, it is all talent, and a number of British films I have seen during 1936 have been an artistic delight.

Others, alas, have been not so good, thanks to the astounding complacency with which producers continue to regard the highly important department of the scenario writer. The very backbone of any film, and yet all too frequently the rock on which so much other excellent work is wrecked. Brilliant story writers are ten-a-penny, but even competent scenario writers are apparently unobtainable at any price.

A couple or so pertinent questions and I will leave you to the happy Christmas which I so warmly wish you all. Why must we suffer so many stereotyped character players? Where are even our passable women players? How much longer are producers going to worship the foreigner fetich? Anyone able to answer these questions during 1937 will very subtly enhance the reputation of the British technician.

C. A. W.

ME FOR THE MOVIES

To people like me it's becoming clear that nothing much is happening in the way that scripts are told on the screen—just slow general improvement. What's happening on technics is more definite and interesting. The only field I've had practical work in is that of colour. Mainly translating colour ideas through trick lab. work. But it's no good trying to write informatively about technicalities of colour when there are books like Adrian Klein's "Colour Cinematography."

About the slow general improvement, a friend pointed out that with colour films the producers should have been as daring with their talent as with their coin. They should have risked employing pretty smart art men and plugged for a critics' film, for say, the first two films anyway, so that when they were generally released suburban audiences would not have been robbed of the novelty-entertainment they were supposed to get out of colour. All they saw when they rolled up to the local was just another film, not even, by a long sight, as good as some they had seen in black and white.

Well, it's easy to pick a thing to bits after it's been done—it's done, and so is 1936. What's unbelievable is the amount of waste talent there is lying around that could be contributing such good work to the general satisfaction of everyone. What's a complete solace is the general way this talent is unwittingly biding its time. We are all getting the hang of things more and more—politically, aesthetically, and so on. You for the box-office—me for the movies!

That's in a story about two New Zealand Maoris running in opposite directions in France during the height of a bombardment in the last war. They stopped face to face in the middle of a field. One asked the other where he was going. He was told, "I'm fighting for my King and Country." The other replied, "Right! You for the King—me for the Country!" and away they panoram'd.

Len Lye.

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Greetings from B.P.P.A. (*continued from next page*).

assured. Naturally, as a new body we are suffering from "growing pains," including a few "pains-in-the-neck" in our own ranks, but even these critics are anxious to remain within the organisation.

Building on a sound basis takes time, but when we have our house in order we shall go full out. We have suffered far too long the "kicks" of officials (who, nevertheless want the "pictures") the hordes of amateurs, and, not least, the thoughtless press photographer who lets everybody down. There's plenty to do, but we have the inspiration of the success of your Association, so here's wishing you All the Best for Christmas and "Good Shooting" in the New Year.

Greetings from the British Press Photographers' Association.

GREETINGS to the Association of Cine-Technicians from the newly-formed British Press Photographers' Association. The Press cameramen send all Best Wishes to their colleagues on the newsreels and in the studios. The relationship between the Cine and Press cameraman has always been a happy one and the B.P.P.A. aims to cement that friendship. In many ways your difficulties correspond with ours, both "on the road" and in the studios. Press photographers have long suffered from a lack of organisation, but a determined effort was made by a few pioneers last July and at a large and enthusiastic meeting of newspaper and newsagency photographers, the British Press Photographers' Association was formed. Since then rapid progress has been made, and we are proud of our quickly-growing membership. The B.P.P.A. aims to defend and promote the professional interests of its members; to improve the social status of the Press photographer; and to provide benevolent aids. Press photographers, notoriously difficult to organise at any time, are really getting down to it and the success of our Association is

(*Continued on preceding page*).

New Studies at Iver Heath.

THE illustration on this page is an aerial view of Pinewood Studios, occupying 100 acres of ground.

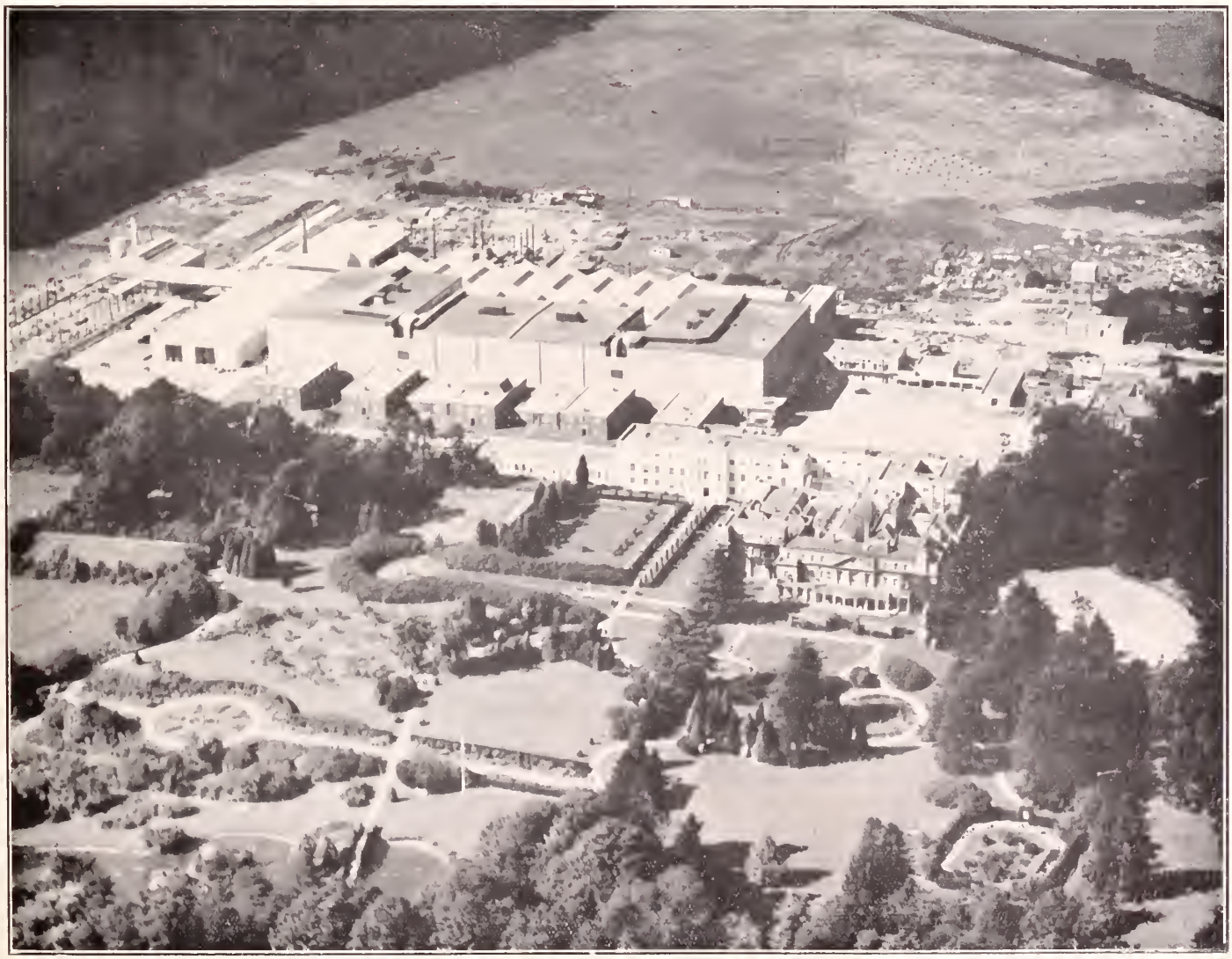
There are eight stages placed in pairs on the unit basis of two stages, one large and one small. The large stages are 165 ft. by 100 ft. and the lesser stages are 110 ft. by 82 ft., all being 36 ft. high to the underside of the grid. The total flow area is 988,000 square feet.

The stages are the first in Europe in which the entire electrical equipment is concentrated overhead at the grid level. On each stage there is a portable remote control switchboard which electrically operates the camera motors, recording cameras, ventilation controls, warning lights and telephones.

Western electric recording equipment is installed and is on the all-mains principle—the first of its kind in Europe. There are two permanent channels and each stage has a channel for portable apparatus.

There are 25 Cutting Rooms, of special design, and containing the latest all-steel cutting equipment.

The exterior lot comprises 48 acres in which there are concealed electric points at strategic spots which can be used for day or night shooting, giving up to 10,000 amps.



PINEWOOD STUDIOS FROM THE AIR.

Some Recent Developments in Sound Recording Equipment

W. H. CLARKE (of R.C.A. Photophone Ltd.)

The following is a paper read by Mr. Clarke to the Association of Cine-Technicians, November 5th, 1936. The original numbering of the figures, several of which are reproduced, has been retained.

Summary.

By the frequent introduction of new apparatus for sound recording and reproducing work, Equipment Manufacturers are applying the full resources of their Research staffs to improve the quality of sound films presented to the public.

In this connection development has proceeded along the lines of improved pick-up devices, constant speed mechanisms for recording and scanning, improved optical systems and light modulating units, extension of frequency range, more elaborate and exact monitoring devices, the further reduction of ground noise, improved resolution of film emulsions and the elimination of distortions emanating from development and printing.

Method of attack on the many problems involved has been facilitated by the constructive criticisms provided by technicians in the field and the personnel of plant, which is closely allied in eventually providing the finished recordings.

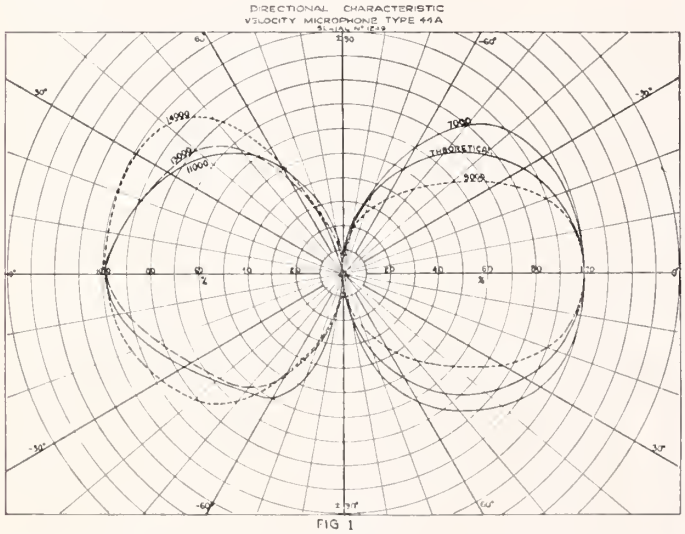


FIG 1

This paper is presented with the object of bringing before you development which is to be put into practical form in the near future. The apparatus under construction by R.C.A. Photophone is providing for an improved microphone—a new type printer—a means of obtaining a more clearly defined sound track by means of ultra violet exposures, and a method of further reducing ground noise and increasing volume range.

In covering these developments, mention must be made of the Neon Volume Indicator, and Uni-directional Microphone, although several members present may already be fairly familiar with both units.

Uni-Directional Microphone.

The Uni-directional Microphone has been developed as a sequel to the bi-directional ribbon, and as a practical answer to the request of prominent studio engineers for a device which would permit sound waves to be collected from the required direction only. The bi-directional microphone, with its well-known figure 8 response characteristic, achieved the dual purpose of rejecting unwanted reflected waves and incidental noises from two directions, and, at the same time, increased the distance at which the microphone could be used from the origin of the incident wave.

Such an improvement in pick-up sensitivity without increased reverberation was a decided advantage in dialogue recording and of great benefit when balancing for orchestral work. However, in sound film recording the second zone of equal sensitivity differing from the first zone by 180° could become a source of inconvenience under certain conditions of action.

The uni-directional property of the new microphone is obtained by combining the characteristics of a pressure operated unit and a velocity operated unit. The essential parts are shown in Figure 2, and in practice use is made of a single ribbon, the upper part of which is pressure operated and the lower part velocity operated. The resultant collecting area of such a combination is shewn in Figure 3, which gives the directional characteristic at several frequencies.

For dialogue recording the wide angle of the microphone shews very little attenuation of signal strength at all frequencies. For example, the attenuation at 60° either side of 0° is about 2·5 db, while the directional property is

Figure 2.

A dis-assembled view of the Type 77-A microphone. Note particularly the pipe which encloses the rear of the upper (pressure-actuated) half of the ribbon, and the ingeniously arranged labyrinth which furnishes the proper acoustic termination for the pipe.

indicated by an attenuation in response of 12 db at 120°. The frequency response curve is seen in Figure 4 and is uniform over a wide range of frequencies.

Neon Volume Indicator.

This piece of apparatus was designed to provide a means of giving an accurate indication of the amplitude of modulated light reaching the film when sound is being monitored at a remote position from the recorder. The essentials of such an instrument are that it be linear in response over the audio range of present recording, *i.e.* 30 to 10,000 cycles, and that the voltage applied to the input transformer be in exact relation to that provided for the recording galvanometer and also that the observed results give the peak values of the recorded signals.

The instrument designed is shewn in Figure 5 and consists of a two-unit voltage stage and gain control, the output of which is fed to the grids of a plurality of acorn type tubes. In parallel across each tube is mounted a small neon lamp so that the operation of the lamp may be controlled by varying the impedance of its associated tube.

From the schematic diagram of Figure 6, it will be noticed that voltage applied to each grid may readily be preset by means of the potential dividers, and the rotation of lamp illumination made to conform with the scale calibration which is marked in decibel levels between —45 and +3 decibels.

The neon indicator should prove of great assistance to technicians when set monitoring, re-recording, or in any position where conditions make it impossible to observe the modulated light beam.

Improvements in Film Processing.

The demand for better quality from sound films has caused intensive research to be applied to problems arising from conditions and plant used in the many phases of recording up to the time the film is presented in the cinemas.

This work has covered acoustic conditions in both studio and theatre, functioning of apparatus for recording

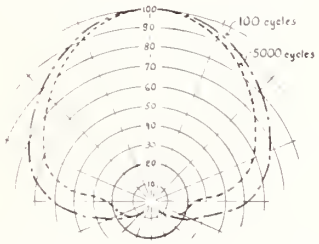


FIG 3 The measured directional response of the Type 77-A Microphone. The wide angle of pickup is a particularly noteworthy feature. The two curves are typical of the response at high and low frequencies respectively. Curves for intermediate frequencies lie between these

and reproducing, loud speaker mechanisms, etc., so that at the present time the many limiting conditions to improved quality are rapidly disappearing. However, it is possible to have acoustical, electrical, and mechanical conditions almost perfect but still find anticipated good quality lost by faulty processing—most probably in the transfer of sound from negative to print. Film emulsions have been developed with better resolving power and with suitable speed for sound track exposures whilst development and printing plant and film control technique has also progressed to keep pace with current demands.

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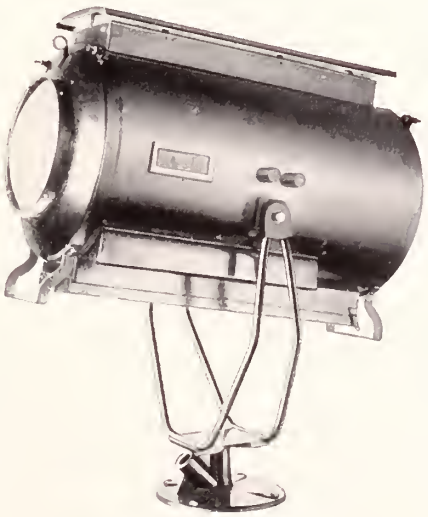

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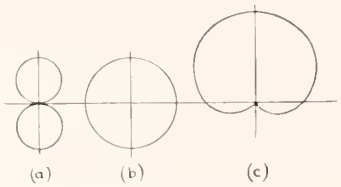
All the improvements made have contributed to a steady raising of the quality standard, but the essential extension of the recorded frequency range has presented problems which can only be successfully overcome by developing a means of providing a much more well-defined negative and print.



The Figure 8 directional pattern (a) of the Velocity actuated part of the ribbon combines with the circular pattern (b) of the pressure-actuated half to provide an overall pattern (c) which takes the form of a cardiod

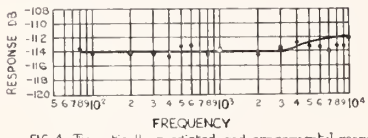


FIG 4 Theoretically predicted and experimental response of unidirectional microphone at 0 degree (zero db = 1 volt). NOTE Data show open-circuit voltage of ribbon

The recent sudden extension of the frequency range placed a burden on film laboratories by requiring them to develop and print to very close tolerances in order to avoid the low frequency modulations, which ruin quality, when distortions are introduced into the upper frequency range.

Two of the serious causes of distortion which are sometimes very prevalent are poor contact at the exposure point and printer slippage, the latter being due to the uneven length of the negative film and printing stock. Heretofore, in printer apparatus correction has been allowed for a definite amount of negative shrinkage, but in practice the varying conditions met with in film processing prove that a wide tolerance of correction is needed to accommodate the varying amounts of negative shrinkage experienced.

In Figure 7 is illustrated the difference which can occur between two prints obtained from the same negative. One can well realise that the audible results from Figure 7b, when played on a modern reproducer having a wide range of response and cushioned rotary stabiliser would give appreciable distortion and such a print if used for re-recording where the defect would become additive would become impossible.

Distortions as outlined may now be eliminated by the use of the non-slip printer and a photograph of the first experimental model is shewn in Figure 8. It is interesting to note in passing that this model was sent to Hollywood

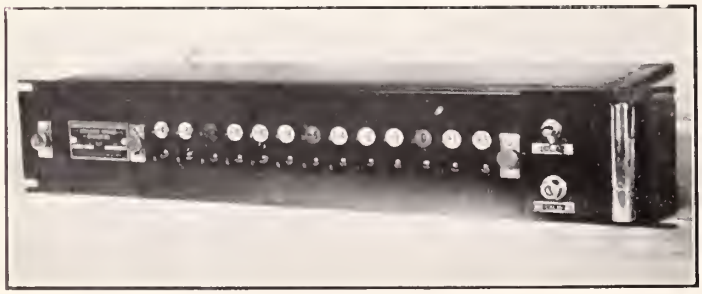


Fig. 5.

from Camden for test purposes and results were such that many thousand feet of commercial prints have been handled for different studios with a marked improvement in sound quality.

The principle employed on the basis of which the printer described was designed is as follows :—

Two belts differing in length may be made to travel past a given point without slippage between the two, provided the belts are held in contact around rollers in such a way to prevent slippage along the line of contact. This statement is based on the fact that when bending a belt round a pulley or roller, the mean length of the belt remains always the same, while the concave side is compressed and the convex side stretched in proportion to the curvature of the roller. If the belt of shrunken negative is bent around a roller of the proper diameter, the outer surface will become longer than the mean length of the film. Thus, if the longer unshrunken raw stock is passed over the same roller, assuming good contact, the concave surface or compressed side of the long raw stock will make contact with the stretched side of the short negative only along the line of tangency.

From Figure 8 it can be seen that the film path has been so arranged to allow a loop to form before the printing point is reached. Any small variation in film loop will cause a corresponding large change in the angle at which the film approaches the contact point. The printer, as designed, will correct for negative shrinkages from 0 to $\frac{3}{4}$ per cent. The film must not pull taut over the pressure roller and the amount of compensation with the size roller provided will correct until the difference between the

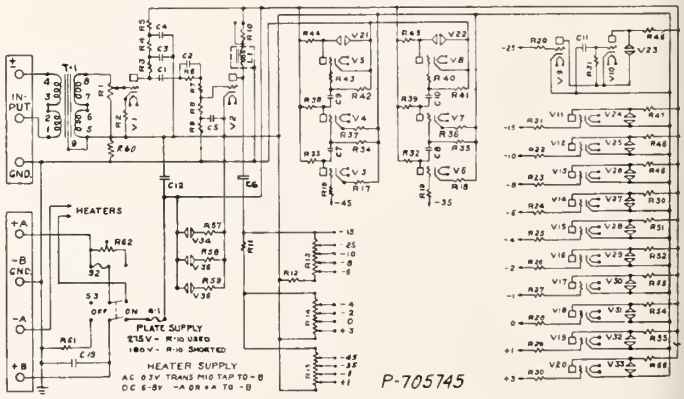


FIGURE 6 —SCHEMATIC WIRING DIAGRAM OF THE MODEL PB132A1 NEON VOLUME INDICATOR.

lengths of the two films becomes so great that the diameter of the roller is too small to allow flexing the film round it. A rotary stabiliser is attached to the printing drum shaft to provide satisfactory motion at the printing point while the pad roller ensures proper contact at the printing point. It is important that the printing light strikes the film at the contact point only, to prevent blurring of the image, and arrangements have been made to restrict the height of the light to about 0·0025″. This is performed by imaging a 0·005″ mechanical slit on the film through a two-to-one reduction.

As a clearer indication of what the printer is, we have been able to advance production sufficiently in London to place a production unit before you to-night. It is quite anticipated that the introduction of this printer will eliminate the cause of distortions in printing work and

ensure that films, whether for daily rushes, re-recording, or release, are a close replica of the original negative.

Ultra Violet Exposures.

With recordings made on a magnetic drive recorder employing the latest amplifying equipment and light modulating units, and playing the record over a good

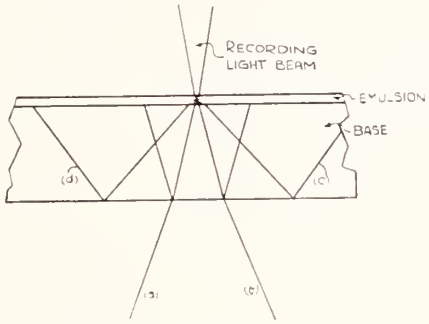


FIG 9

reproducing apparatus embodying a rotary stabiliser soundhead there still remained distortions introduced into the upper frequency area which became serious under certain conditions of treatment.

This problem resolved itself down to a means of obtaining improved resolution of the film and better definition of the images presented by the lens system.

Since the emulsion thickness of sound-recording film is about 0·005″ and is made of a white diffusing material, it is impossible to restrict the light within the emulsion to the thickness of the beam. This is clearly shewn in Figure 9, which is a cross section of a film and the recording light beam.

After entering the top layer of emulsion the light is immediately scattered, so exposing adjacent silver deposits outside the thickness of the beam. Further, as the light penetrates the emulsion its intensity is decreased by

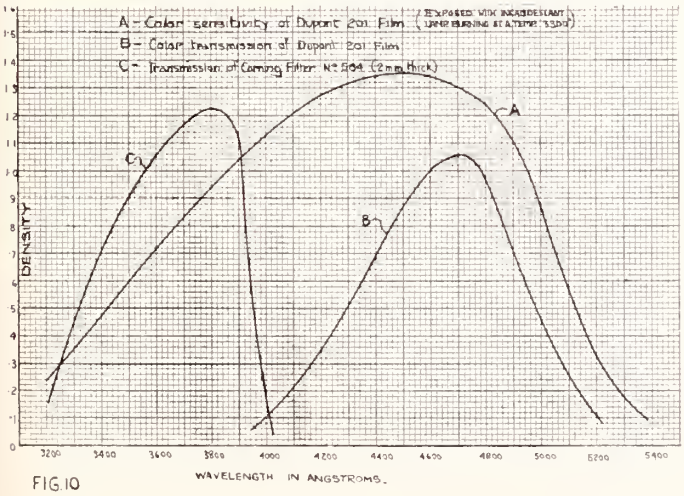


FIG.10

absorption, but it is of sufficient actinic value by the time it reaches the celluloid base to permit reflections to expose the lower side of the emulsion. Such a condition gives rise to an ill-defined trace.

It has been proved that all this can be completely eliminated by restricting the light exposures to a small band of frequencies which are strongly absorbed by the emulsion,

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and may be accomplished by introducing a filter in the light path from the exposure lamp for recording and printing.

Film emulsions are sensitive to a wide range of wavelengths, and as in white light recordings, the emission from a tungsten filament lamp covers wavelengths between 3000 and 7000 angstroms approximately, some trouble is experienced in attempting to correct lenses for chromatic aberration and so bring the entire spectrum to one point of focus.

The introduction of a filter eases the problem of lens correction and it is found that good absorption is obtained in the emulsion by using a band of frequencies for exposure between 3400 and 3950 angstroms. Figure 10 shows clearly the range of sensitivity of a recording film emulsion and at (B) we have the area of colour transmission, while at (C) the transmission of a filter which coincides with the region of strongest absorption of the emulsion which is below 4000 angstrom.

The film really becomes its own filter and in this way exposure of the emulsion is restricted to the surface only, and as the small wavelengths have feeble penetrating power no light enters the emulsion to be reflected from the base. Sufficient energy, coupled with a satisfactory lamp life, is found to be radiated from an incandescent lamp between the range of 3400 and 3950 angstroms when run at approximately 7½ amperes, and the region of exposure chosen is further advantageous because flint glass, necessarily used in lens correction, readily transmits this band.

To complete the light path the recording galvanometer mirror has been constructed of a thin layer of alluminium alloy on a glass base. This type of mirror has a high reflection for short waves and eliminates the secondary waves which result from a rear surface unit.

The effect of recording and printing under the conditions outlined above are shewn in Figure 11, and the improved definition eliminates one other source of film recording distortion. At the same time, the laboratory tolerances are widened, for it has been found that a wide variation of print density in variable area sound tracks is possible without any further increase of distortion than that now obtained with the closer print density tolerances when using unfiltered light.

9,000 Cycle Prints.

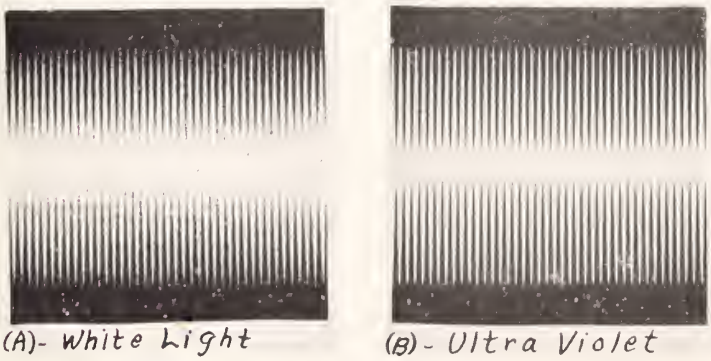

Fig. 12.

In Figure 12 the upper picture is a white light print from a white light negative, while below is an ultra violet print from an ultra violet negative.

To assist the pictorial appreciation of the improvement obtained, we see in Figure 13 the attenuation experienced between 1000 cycles and 9000 cycles at different densities when both frequencies are recorded and printed with white and ultra violet light respectively.

In the printing process it might be pointed out that the restricted band of printer light wavelengths pass right through the clear portion of the sound negative and are readily absorbed in the surface of the positive film. The non-spreading of the light on the printing stock by reason of the feeble penetration of the emulsion makes possible higher track densities on the print, which in turn reduces the ground noise level.

In conclusion, as we are dealing with recent apparatus development, it is of interest to mention a modified type of sound track which has been designed for R.C.A. photo-

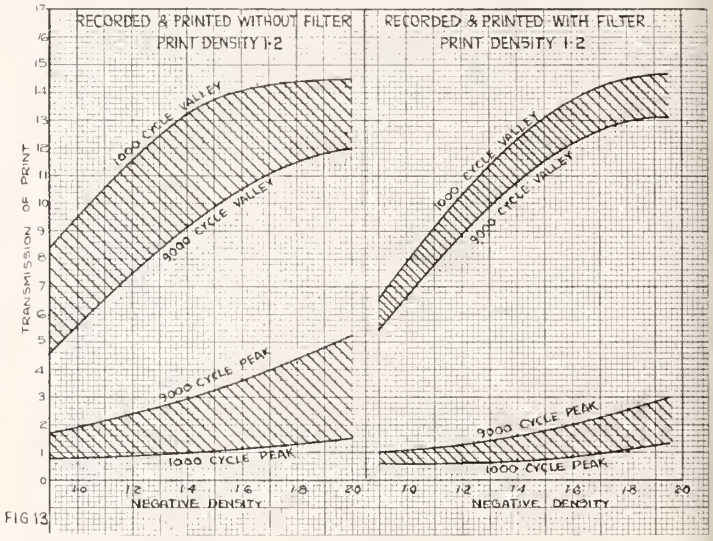

Fig. 13.

phone equipment and which allows an extension of the track volume range while at the same time without the assistance of amplifiers requiring careful adjustment it automatically reduces ground noise to a very low level.

I refer to the push-pull type of track which may be used for all original studio work intended for re-recording.

The push-pull reproducer optical system utilising a double plate photocell may be conveniently used either for push-pull track or by throwing a toggle switch both plates are connected in parallel to form a unit suitable for the reproduction of standard recordings.

To obtain this new type track with R.C.A. Photophone equipment it is only necessary to change the aperture plate in the optical assembly. The plate is cut to allow two areas of light to expose the film and arranged in such a manner that the centre line of each area is midway between the centre and outside edge of the slit. Virtually, the slit may be considered as two units allowing full modulation of each part over a length of 0·038″. Both exposure areas give a triangular exposure, but both triangles are inverted so that their apices lie on a line across the length of the slit aperture. One area of light is used for positive wave swings while the other area records negative swings. The resultant sound track appears as two parallel series of pear shaped exposures. One can appreciate that only light transmission caused by recorded sound reaches the photocell during reproduction, which is the minimum level of ground noise reduction.

This development will become increasingly useful and it is interesting to observe that already theatres fitted with push-pull heads can obtain push-pull films on request,

(*Continued on next page.*)

Visiting Cine-Technicians Abroad

MEMBERS of the General Council who spent their holidays abroad took the opportunity to visit film studios and to see the officers of cine-technicians' associations and convey the Association's greetings. Mr. Bond was in France and saw Monsieur H. E. Darol, treasurer of the Syndicat General des Travailleurs de l'Industrie du Film. He reports that there is only one organisation in France, covering all grades of studio workers—technicians, electricians, carpenters, etc. Its membership has increased from 600 to 3600 since the new Government passed legislation giving improved conditions and salaries, as reported in the previous issue of the *Journal*. Our French colleagues conveyed through Mr. Bond their greetings and good wishes to British technicians.

Mr. Cole visited the U.S.S.R. He gives us the following impressions :—"Lenfilm Studios, Leningrad — Debrie cameras, Shuorin sound-system (variable area with squeeze), Moviola moviola (one with double sound-head for married print or two sound tracks at once ; also busy coupling three sound-heads to permit running three tracks and one picture synchronously). Preferred, however, cutting in the hand to extensive use of moviola. Rushes girl identifies words, sounds, on track as she synchronises rushes ; writes them on track ; director then cuts visually. Have started dubbing foreign films—did Clair's 'Le Dernier Millardaire' and James Whale's 'The Invisible Man.' 'Nightingale, Little Nightingale'—first full-length Russian colour feature by Ekk of 'Road to Life.' Two-colour system—close-ups women's heads, kerchiefed black or dark blue against light blue sky, very lovely ; but colour generally poor—fuzzy long-shots, eye-strain dissolves, shadows often black-out. Novelty omission cast-list—instead superimposed title introduced each character as he appeared. Film curiously old-fashioned—began early Mary Pickford, finished D. W. Griffith. 'New Gulliver' much better. Full length puppet-film, excellent animation and expressive design. London Film Society are to show it. A.C.T. members should see.

Privilege meet Eisenstein—missed in Moscow, caught in Crimea, where on location finishing 'Pavlik.' This has new experiments in cutting to music—symphonic, rather than direct and rhythmic synchronisation of image with sound ('the shape of the sound suggests the shape of the image'). Eisenstein contributing chapter for a forthcoming book on Chaplin, whose 'Modern Times' was playing principal cinemas Moscow, Leningrad, Kharkov, Kiev, Odessa (also 'City Lights' in Moscow). Declares 'Modern Times' is same old Charlie in different settings, not new philosophic Charlie theorists have urged. After completing 'Pavlik,' is to prepare for press two-volume work on cinema, epitomising his lectures over last four years at State Cinema Institute in Moscow."

Sound Recording Equipment (*contd. from previous page*).

when exhibiting films made in some American studios where both type of negatives are prepared.

The lecture was held at the R.C.A. Offices, Electra House. We are indebted to the Company for their generous hospitality and to Mr. Clarke and his colleagues of the recording department for the great trouble taken to make the evening a perfect one for all those who were able to be present.

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Fifteen Years

By CYRIL BRISTOW

FIFTEEN years ago, a very strong desire to enter the film business led me to my first job as office boy with Messrs. Gaumonts at their Lime Grove studios. I held that position for one week, passing on to the Electrical Shop and eventually through most departments, until I became Bill Shenton's assistant on the camera. Realising immediately that there never was or could be any other Department for me, I settled down to gather film experience.

Five years later I left Gaumonts a fully-fledged Assistant Cameraman, carrying with me the warning that if I became successful in the film business, I should either starve to death or make a lot of money. I have yet to make a lot of money, but am certainly not starving to death.

Another five years' operative camera work with different firms, gaining invaluable knowledge of different camera lenses and of the differing styles of cameramen, saw me with B. & D. at Cricklewood. In those days their chief cameraman was Dave Kesson, and it was just a matter of time before I was given my "break."

CYRIL BRISTOW

Having reached the position of chief cameraman, and having worked on many pictures, good and bad, I find I have some practical thoughts on this picture business. Talking to a well-known American director the other day, he told me that in his opinion we didn't pay sufficient attention to the writing of the story; and quoted the old stock phrase that "back home if we are not satisfied with the story we call in another dozen writers if need be." Here, he maintained, the practice is that if you had decided on a starting date for the picture and are not satisfied with the story, you start just the same and try and make the story up on the floor, and the result is not very creditable. On some pictures I have worked on this has been so, and the director has had no more idea what his next day's work is to be than fly in the air.

To my mind no picture should be allowed on the floor until a month's preparatory work has been put in by the heads of departments responsible for the picture, and full observations and suggestions made by every department at script conferences. Personally, I like to go over every shot in the script and make suggestions to my director and his assistant as to the positioning of the main artists in the set for reasons of composition, and as to the particular background suitable for them, by reason of their colouring or facial peculiarity. Whether a particular shot shall be a crane, dolly, pan or stationary shot should also be decided at the conference and not on the floor. Notes should be made by the cameraman and the assistant director of any intricate shot, such as a tracking shot or a crane shot, and when the time comes to shoot it the assistant director should stand by the cameraman and see that everything he wants is arranged for, such as positioning of props, etc. Everyone not connected with the shot should be kept away from the set and camera. The artists should be rehearsed with the operative cameraman for mechanical movement while the cameraman is setting his lighting. The O.K. for sound should be obtained and the director then called. If this method were a general rule, very little time would be wasted.

Having photographed some Quota Productions my impression was that, technically speaking, you were not expected to worry too much about the quality of the finished picture, it being strictly understood that you had to finish the picture in three weeks on the floor. From a director's point of view that is an extremely difficult proposition unless he has 100% support from his technical staff, because it means that from the time of starting at 9 a.m. you are continually on the move from one set to another until the time comes (usually about 7 p.m.) when, physically and mentally, you feel you have had quite enough for one day. I personally find it much harder to make a Quota picture than a production lasting six weeks, because I find that unless a director comes on the floor with his day's work cut and dried and his individual shots worked out by the responsible people, it is impossible to complete the production within schedule time. When there is doubt in the minds of the people responsible, you will find it increasingly difficult to get the work done—the chief reason being the apathy of the staff.

(*Continued on page* 94.)

THIS TRUCK

is a Dennis Four-ton Forward-control, with specially-designed body, including accommodation for a staff of four in addition to the driver, driver being in a separate cabin. Sliding Roof, Roller Shutter at the back and tailboard. Special attention has been paid to the springing of the vehicle owing to the generator being a dead-weight of two-and-a-half tons. Total weight of truck—fully loaded—8 tons 6 cwts. This vehicle is privately licenced, therefore allowing cruising speed of 30 miles per hour. Special plain insert boards are used should the client desire to cover the Revelation Films trade-mark.

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Development and Its Chemicals

ARTHUR JAY

IN the development of an ordinary negative the silver bromide that has been rendered unstable by the action of light is decomposed, its bromine is taken away and the metallic silver remains. This is exactly the effect that the light itself would have if its action were allowed to continue under suitable conditions. But it is not true to say that the light starts the change and the developer continues it, because in that case the exposure and the development would be interchangeable, that is, more or less exposure with less or more development would lead to the same result.

The first requisite of a developer is that it shall be able to remove bromine from silver bromide, and the second is that it shall not be able to do so unaided, but only when its action has been facilitated by the previous action of light or its equivalent. Whatever is the primary agent employed, it is desirable to be able to adapt it to varying circumstances by accelerating its action or retarding it, so that it will do its work in a steady and well-balanced manner. The mixture used for developing, therefore, consists among other things, of the developing agent proper, an accelerator, a retarder and a preservative. The developing agent as it takes bromine from the silver bromide combines with it, and the product of this combination is usually deep in colour. This, if uncontrolled, would stain the negative. The preservative, as a rule sodium sulphite, prevents this and so keeps the negative clean.

The four *active* constituents of a developer are :—

1. The Reducer—*i.e.*, Hydroquinone or Metol.
2. The Accelerator—*i.e.*, Sodium Carbonate, the alkali which sets the reducer working.
3. The Restrainer—*i.e.*, Potassium Bromide.
4. The Solvent and Dilutent—*i.e.* Water.

Hydroquinone, when solid, is gradually affected by the air and becomes brown, though the change is very slow. It should, therefore, be kept in well-stoppered bottles. In solution it is more readily oxidised, especially if a small quantity of alkali is present, such as is frequently met with as an impurity in sodium sulphate. The solution becomes yellowish and then brown, but it does not alter at all rapidly and unless it has become markedly brown, it probably retains most of its original developing power. In the absence of any alkali and especially if the solution is slightly acid, it will remain practically unchanged for a long time.

Metol in a solid form remains unaltered for a long time if kept in a well-corked bottle. Its aqueous solution soon turns brown when exposed to air, but if it is mixed with sodium sulphite the discoloration is prevented for a considerable time. In the end the solution becomes yellow, and ultimately brown, but it may retain much of its developing power even after it has become somewhat dark brown, provided that no precipitate has formed.

Potassium bromide, either solid or in solution, remains unchanged.

Borax does not alter either in the solid state or in solution.

Sodium carbonate contains, when pure, as much as 63% of water and only 37% of true sodium carbonate. It somewhat rapidly loses water when exposed to air and the large transparent crystals crumple down into a powder consisting of very small crystals of monohydrated sodium carbonate, which contains only 14½% of water and 85½% of true sodium carbonate.

Sodium sulphite, when in solid form, slowly absorbs oxygen from the air and is superficially converted into sulphate, the change proceeding further and more rapidly in a moist atmosphere than in a dry one. In a properly stoppered bottle the amount of alteration is as a rule but slight. Aqueous solutions of the sulphite have a greater tendency to absorb oxygen and the oxidation takes place more rapidly in dilute than in concentrated solution.

Fifteen Years (*continued from page* 92.)

This rule does not apply only to Quota pictures, of course, because I have had the misfortune of working on a production that finally cost £100,000 to complete when the main consideration seemed to be to find a strong situation in a magnificent setting to do credit to the leading star. Chiefly owing to the fact that the production staff had not had sufficient conferences with their director, it resulted in the re-writing of the story in four different ways, the employing of five different directors and three chief cameramen, and the ultimate result of a not very successful picture and a financial disaster. Such productions do a lot of harm to the business and there should be no repetition of such failures.

It is always surprising to me that I've never heard of an English cameraman who has become a successful director. It would seem that the photographer, who is the director's right-hand man and has worked on good, bad and indifferent pictures should, given the opportunity, be in a position to choose his story and, through the medium of the camera, offer the finest interpretation of it. He is in a position to know, through experience, just where to place his camera to advantage ; whereas a good percentage of the directors to-day, in all fairness, don't know the difference between a 40 mm. lens and a 100 mm. They certainly don't know how to use it to advantage. Also, except in rare cases, the photographer is the only person to see the advantage of any trick shot that means anything.

In my experience the only other department to contribute to the directorial chair, is the Editor. His experience in the Cutting Room is naturally invaluable. It just remains to find the right one who can collaborate with the right cameraman and story writer, when the results should be worth looking at.

In conclusion, I should like to say that I am happy and proud to be associated with the British Film Industry. Having grown up with it I can quite realise, with the new studios being built, and new equipment being designed, what a grand profession this can be. There is just the question of stabilising it, and the co-operative spirit, which must lead to better pictures.

YET ANOTHER TRIBUTE . . .

Beaconsfield, Bucks,
10th August, 1936.

Dear Mr. Vinten,

Now that I am back in England after a fourteen months' sojourn in India, photographing "Elephant Boy," I feel that you would be interested to know how the equipment stood up during the trip.

You will recall that before leaving, and after many tests of different makes, I decided to depend on the Vinten Model "H" camera, and I am happy to be able to tell you that the camera has more than justified the confidence I placed in it.

The conditions under which it was required to work were many and varied: great changes in temperature and humidity, bumping along over many miles of rough jungle roads, carried through dense growth on the backs of elephants, and many other trying conditions too numerous to mention: never once did it give the slightest trouble, not even a film scratch can be held against it—a record, I believe, for a camera to be proud of.

If by any chance I am given another expedition, I shall feel satisfied and assured of the best results if I have a Vinten Model "H" with me.

So, wishing you every success, I am, yours truly.

(Signed) O. H. BORRADAILE.

"THE ELEPHANT BOY"

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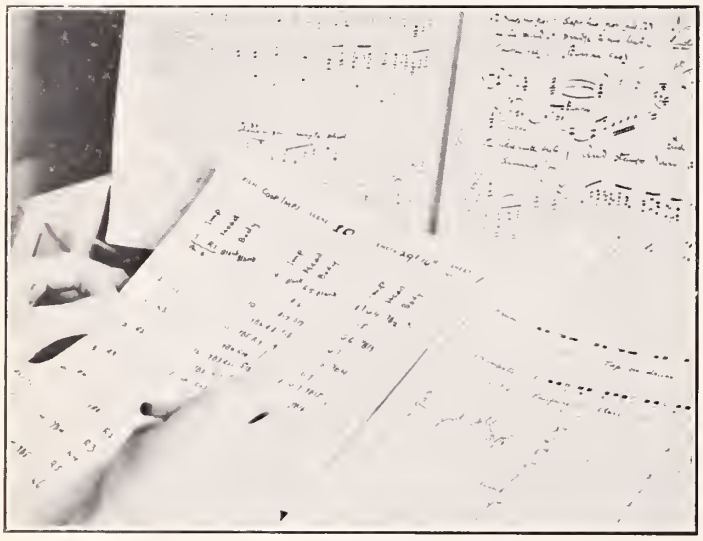
Secrets of Cartoon Technique

A. E. C. HOPKINS

Joint Managing Director, Publicity Picture Productions, Ltd.

I DON'T propose in this article to cover well-worn ground, but merely to try to explain the apparently minor technicalities which mean so much to the finished cartoon.

When we started producing cartoons some twelve years ago, we had no money, a small basement in the city,



Analysis Chart.

a Moy camera, and lots of optimism. The camera and cameraman were perched on a rostrum some 14 ft. high. Below, lying flat on his belly, was the artist, manipulating a thirty by forty drawing, and occasionally singing "one," whereupon the gentleman above, having bumped his head on the ceiling, would hand-crank one picture.

To-day with the advent of colour and sound the job is much more complicated, and many minor technicalities, if overlooked, lead to disaster.

One of the most important things as regards colour is, of course, consistent exposure.

We were amazed to find on installing a recording voltmeter in our supply that the electric company, who should give us 230 volts A.C., were at no time giving us more than 220; this, of course, sends the lighting "into the red." However, to make matters worse, the supply would drop down to six volts below this figure! Indeed, a sick man's chart had nothing on our graph reading!

The remedy was a rectifier to give constant D.C. voltage, and a special 3-phase main to drive a new synchronous motor!

The rostrums are built of metal and rag-bolted into the wall. Optical glass is used on a sprung frame to take the drawings, while a shuttle-gate camera, mounting a turret of colour corrected lenses, is turned by a mechanical clutch.

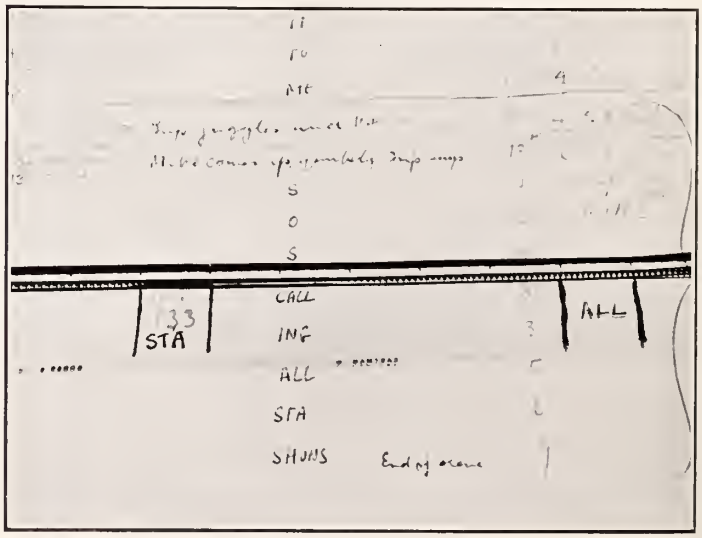
Colour and thickness of celluloids is another important factor. If the cells are too thin they tend to buckle and halate; if too thick they will deaden colour values, or act as a combating filter to the tricolour screens. Incidentally, celluloids are handled throughout with gloves.

A staff of artists draw up the key positions for each scene on paper, and these in turn are handed to the "in-between" artists who draw the animation between, say, one to six frames. These drawings are then put on to celluloid and coloured on the back. By the way, I have known one celluloid of a crowd scene take half-an-hour to colour!

Before, however, drawing is started, a lot of complicated work has to be done. The scenario having been approved, a "shooting" script is prepared, and every scene is drawn up by means of thumb-nail sketches. Angles and continuity having been decided upon, lengths are allocated for each scene and then the musical director takes over. He must carefully work out the score, compose the necessary songs and musical effects to the lengths decided upon, and then, of course, record.

The track is printed on Rochester framed stock and then comes the tricky job of marking up the effects, the rhythm and speech. Time sheets are then prepared so that the artists know to a frame what movements to draw, thus ensuring that the final married print is in perfect synch.

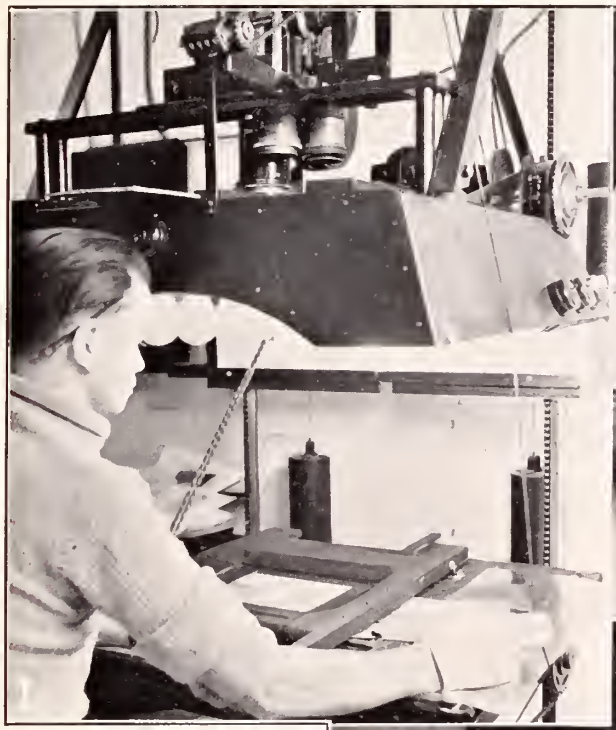
And now I suppose you are going to ask the same question as our highly respected Sunday papers: "Why

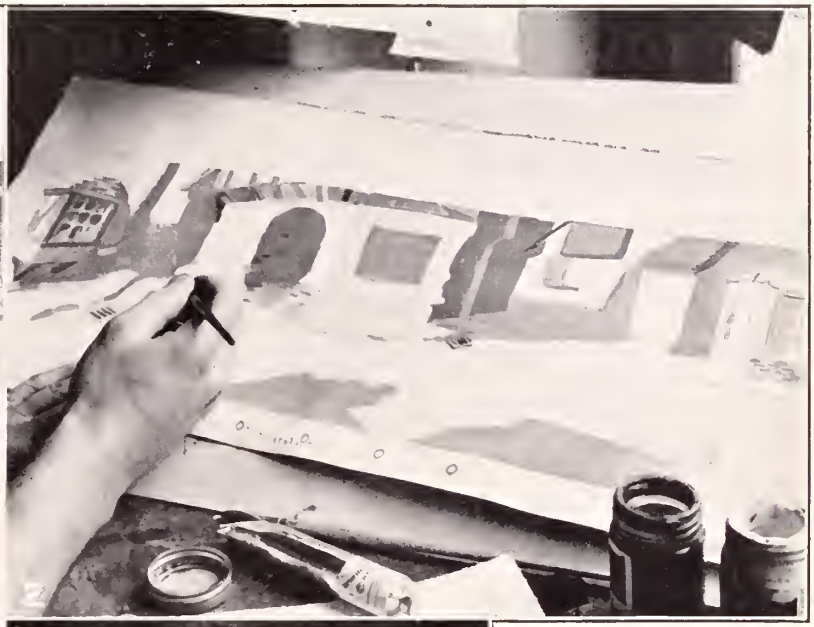


Analysis Chart with Track.

is there no English Walt Disney?" Simple, the advertiser will pay a reasonable price for the product, the renter won't!

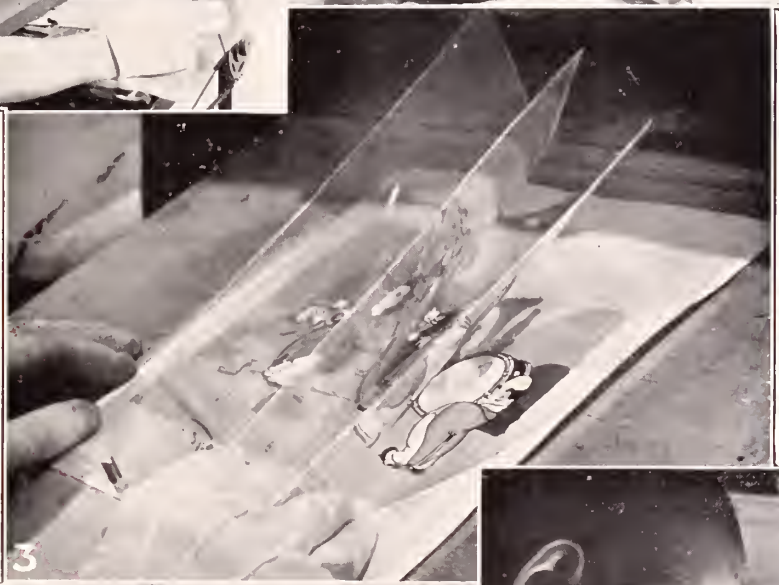
To put out a picture of the same quality as Disney, in a reasonable time, would cost between three and five thousand pounds. When I tell you that the average renter will offer around three-hundred pounds for your negative, plus a, dare one say, mythical, 50-50, you will understand why we join little Audrey and L———!





1. Touch of the cord takes one picture.

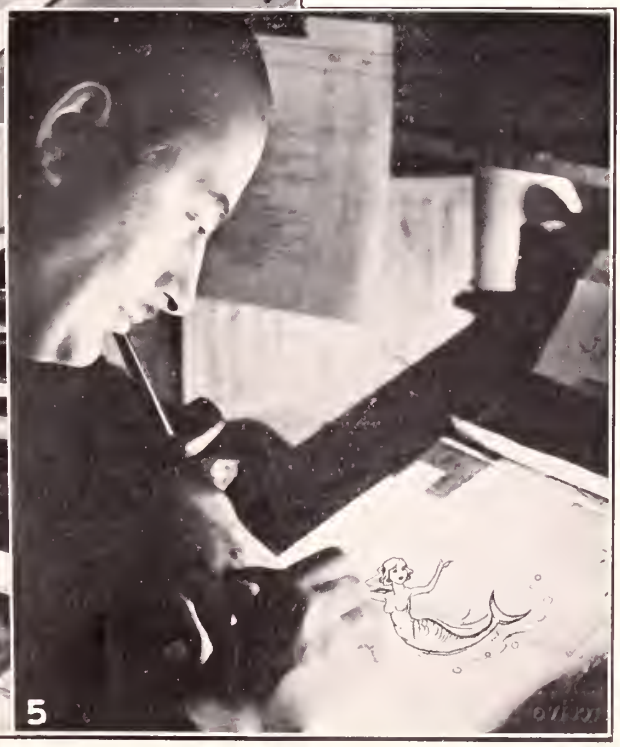
2. Building up a "pan" background.



3. How the frame is built from a number of cells.

4. Key men at work.

5. The creative key man.



SECRETS OF CARTOON TECHNIQUE. Photographs of Publicity Pictures at work.

Screen Brightness and the Visual Functions

E. M. LOWRY (Kodak Research Laboratories)

THE object of this paper is to present the known facts, as reported in the literature, regarding the visual functions in so far as they are influenced by the brightness of the projection screen and its surroundings in the motion picture theatre. Since the enjoyment of the entertainment offered depends for the most part upon the organs of vision, the importance of providing conditions conducive to maximal visual comfort will be unquestioned. In order that the motion picture engineer may provide such conditions, it is necessary that he have as complete knowledge as possible of those factors which govern the efficiency of the visual organs. The attention of the audience must necessarily remain fixed upon the projected picture for long periods and, therefore, it is of the utmost importance that the projection system of which the screen and its background are an integral part be so adjusted as to secure undivided appreciation of the picture presented.

The projection screen and its environment constitute the visual field and the perception of the detail in the projected picture is the visual task set for the eyes to perform. Therefore, a complete understanding of all factors which influence the operation of the visual functions is the first requisite to the provision of a satisfactory arrangement of illumination conditions, and, consequently, of the screen brightness.

We know that fundamentally radiant energy, possessing the appropriate wave lengths and intensities, is the governing factor in the operation of all visual functions. We do not, however, know completely the process by which radiant energy is transformed into visual sensation and, therefore, the functional responses of the visual process are beyond our control except by the indirect method of adjusting those external factors with which they are correlated. These factors are the quantity, quality, and distribution of light, together with the length of time that the eye is exposed to their action. It is through the study and regulation of these factors that we may secure maximum visual efficiency.

Several years ago, in addressing a meeting of the Society of Illuminating Engineers, Dr. E. C. Crittenden remarked that "Man's eye and his sensations must remain the basis for the evaluation of light." It is on such a basis that the problem of securing satisfactory screen brightness must be attacked. Dr. Troland, in an exhaustive review of the literature, has summarised the majority of the data available up to 1925 and, in this paper, extensive use has been made of his work for which acknowledgment is here given.

As already stated, we are primarily concerned with perception, and, consequently, for our purpose, the most important of the visual functions are the perceptual ones, although the motor functions may not be entirely disregarded. It is fundamental to the problem that all of the functions of the eye owe their initiation to light but, as will appear later, the latitude of lighting conditions is a wide one. Because of this fact, it is natural that the first phenomenon to be considered is the ability of the eye to perceive light. The least amount of energy which the eye can perceive is dependent upon the sensitivity of the retina and retinal sensitivity automatically adjusts itself for the brightness level to which it is exposed. That is to say, the threshold is influenced by the adaptation or intensity level by which the eye has been stimulated. As a consequence, the absolute threshold is reached only after complete dark adaptation. Under such conditions, the least perceptible quantity of energy is of the order of $4{\cdot}2 + 10^{-9}$ erg per second. This value is stated by Troland[1]* to be a fair average based upon a large number of determinations by different observers.

For our purposes, the above figure will have more significance if reduced to photometric terms. The transformation may be accompanied by employing what has been called the mechanical equivalent of light. As reported by Coblentz and Emerson,[2] and by Hyde, Cady and Forsythe,[3] the most probable value of the mechanical equivalent may be assumed to be 0·00156 lumens per watt for the wave length to which the eye is most sensitive, namely, about 556mu., or one watt should yield 641 lumens. Now, the energy value at the absolute threshold is $4{\cdot}2 + 10^{-16}$ watt, and therefore its value in lumens is $2{\cdot}7 + 10^{-13}$. According to Troland, this value of the quantity of light striking the retina corresponds to $7{\cdot}3 + 10^{-9}$ candle, one metre from the eye, assuming a natural pupil.

To go a step farther, it is found that for foveal vision the threshold is dependent upon the total flux of energy entering the eye without regard to area, so that the brightness for threshold visibility, of an object of given size, may be computed. It has been calculated that, under conditions of dark adaptation, a square whose sides subtend an angle of two degrees at the eye must have a brightness of approximately two-millionths of a foot-lambert, if it is to be detected.

The unit of brightness adopted throughout this paper is the foot-lambert, defined as the brightness of a perfect diffuser which emits or reflects one lumen per square foot. We may say that any surface whatever, when viewed in a definite direction, has a brightness of x foot-lamberts, meaning that the particular surface when so viewed has a brightness equal to that of a perfect diffuser emitting or reflecting x lumens per square foot. On such a basis, assuming more or less perfect diffusion, the product of the illumination is foot-candles, incident upon a surface, and its reflection factor is numerically equal to its brightness in foot-lamberts. Considerable confusion exists in the literature with respect to the unit of brightness, and for this reason an attempt has been made in this discussion to reduce all brightness values to the same unit, namely, the foot-lambert. To this end, a conversion factor has been applied to results given originally in millilamberts, and in those cases where the illumination is specified in foot-candles, a reflection factor of 0·80 has been assumed.

So far the results considered have been for the threshold of vision and dark adaptation. Let us examine the effect of adapting the eye to different brightness levels, because, due to the automatic adjustment of its sensitivity, the higher the intensity the lower the sensitivity becomes. Nutting, Blanchard, and Reeves[4] carefully studied the

* Numerals throughout article refer to References at end.

★OUR CAMERAMAN MAKES ANOTHER SCOOP

EAST END BATTLE *(This picture appeared in* THE DAILY MIRROR *Oct. 12th,* 1936)

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effect of intensity level upon the threshold with a 5-degree test field. Their results reveal the fact that when plotted on a logarithmic scale, the threshold is proportional to the intensity for which the eyes are adapted. As applied to the problem of projection screen brightness, these data have the following significance ; with the eyes completely adapted to a brightness of the screen of 10 foot-lamberts they would be unable to detect a brightness of less than 0·033 foot-lamberts, if the screen illumination were suddenly removed. The fractional amount of the original intensity which can be detected decreases as the level is raised and reaches a minimum value at approximately 100 foot-lamberts. As the eye functions in the midst of its normal surroundings, it is continually directed from one point to another in the visual field, and the above data show that the range of brightness is best at that at which the eye is able to distinguish the smallest fraction of the brightness to which it has just previously been adapted. In 1929, the writer[5] studied this problem somewhat further from a slightly different angle and determined the extinction point for light with the eye adapted to a variety of brightnesses. This point was termed the brightness of black and has application to the present problem in the following way—If the eyes of the observer are again exposed, for example, to a field brightness of 10 foot-lamberts, then any point in the visual field whose brightness is not over 0·08 foot-lambert will appear black.

Since the eye is not in any sense an accurate means of judging absolute intensity, its ability to distinguish differences in brightness is of considerably greater importance. This function is commonly known as contrast sensibility and has been the object of investigation since the time of Bouguer,[6] in 1760. As it is accustomed to operate in everyday vision, the eye must discriminate between relative brightnesses. That is, the objects toward which the eye is directed emit or reflect light in varying amounts, and the eye is called upon to discriminate between these differences. In 1934, E. H. Weber, the founder of modern psycho-physical methods, experimentally investigated the relation existing between physical stimuli and sensation and formulated his findings in the statement that : "The just appreciable increase of stimulus bears a constant ratio to the original stimulus."[7] Somewhat later, Fechner attempted to express sensations in quantitative units, assuming that all just noticeable increments in sensation are equal, and stated the law that "the sensation varies as the logarithm of the stimulus."[7] That is to say, over a wide range of intensities the increments of brightness sensation are determined by the ratios of the particular light intensities rather than by their absolute values. Even the men for whom the law is named were aware that there were limitations beyond which it did not hold, and Helmholtz[8] and many others have pointed out the fact that the fraction varies considerably with intensity, but that there is a middle zone of intensities where the variation approaches a minimum value. The limits of this zone are a matter of considerable interest to us because they will be determined by the fineness of discrimination required.

In 1876, Aubert[9] studied the deviation from Fechner's law and found high sensibility between brightness levels of 3·2 and 13·2 foot-lamberts. Later, König and Brodhun[10] collected data which were recalculated by Nutting[11] and showed maximum sensibility at about 16 foot-lamberts. Helmholtz,[12] Schirmer,[13] Simon,[14] Cobb and Geissler,[15] Nutting,[11 16] Reeves,[17] Blanchard,[18] Schoute,[19] and others have all made studies of the relation between the power of brightness discrimination and brightness level. The average of some 14 values computed by Troland[1] places the lower limit of the Fechner law at a value in the neighbourhood of 5·6 foot-lamberts. Increasing the intensity by a factor of 10 makes but a slight increase in sensibility, and for that reason offers no advantage to vision with respect to this particular function. Luckeish[20] places the best region for sensibility to brightness difference at around 10 foot-lamberts. Our conclusion, therefore, may safely be that the maximum sensitivity to brightness difference lies within a range of from 10 to 100 foot-lamberts. Within this range, the fractional difference is approximately 1/100 of the adapting brightness. Besides the brightness to which the eye is adapted as studied by Nutting,[11 16] Blanchard,[18] Reeves,[17] Petren,[21] and others, there are several factors which may affect the response to brightness differences. Among these are pupillary size, which controls the intensity of illumination falling on the retina, and the size of the stimulus or test field. The effect of the latter has been well demonstrated by Reeves,[17] who found that the smaller the test spot the higher must be the intensity for maximum sensibility. French[22] also investigated the effect of stimulus size, and expressed his results by the equation $B = 1 \sqrt{d}$, where B is the percentage difference in brightness just distinguishable, and d is the angular diameter of the retinal image. On this basis, the maximum sensitivity may be realised only when the visual angle is not less than 4·2 minutes.

The work of Dittmers,[23] Schjeldrup,[24] Cobb and Geissler,[15] Cobb,[25] Adams and Cobb,[26] Selfers,[27] Martin,[28] Emerson and Martin,[29] has emphasised the very marked effect exercised upon the discrimination threshold by the brightness of the surrounding field. Cobb[25] found that brightness contrasts between 1 and 0·1 (central/surrounding field) caused a very rapid decrease of retinal sensitivity when the central field subtended less than 30 degrees at the eye. The decrease, however, was small when the contrasts were 1 and 10 in the opposite direction. In general, therefore, a surround brighter than the test field is more detrimental than a darker one, and it is reasonable to conclude that when the brightness between the surround and central field is least the discrimination is best.

Since, as we have seen, a certain amount of light is necessary to produce the sensation of light, it should be obvious that details cannot be recognised unless each element of the detail directs toward the eye sufficient light for its recognition. This function, commonly called visual acuity, is perhaps the most important of all the visual functions. The perception of the presence of an object is not limited by the size but only by the intensity of the light which it sends to the eye. However, the perception of form embodies another factor, namely, the disappearance of brightness difference because of the smallness of the pattern of the test field. The reciprocal of such angular size is taken as a measure of visual acuity. While visual acuity must be dependent to a degree upon the absolute intensity, it goes further than that, since it is necessary that the pattern itself shall remain visible. Beginning with Mayer in 1754, scientific studies of the dependency of visual acuity upon intensity have been made. Although the number of such studies has been great, the work of König[30] was undoubtedly the most painstaking. His results lead him to express acuity in the form of a logarithmic law which holds over a range of 0·0000025 to 53·2 foot-

lamberts. At the latter point, the departure from the law is marked by a lack of further increase, although brightnesses went as high as 4320 foot-lamberts. Between 8 and 43 foot-lamberts, he found an increase of 31 per cent. in acuity. Cobb and Geissler[15] also found a logarithmic relation between acuity and brightness for a range of from 0·0013 to 20 foot-lamberts. Cobb[25] and then Dunlop[31] made further studies with approximately the same results. Ferree and Rand[32] found very little increase in acuity above 4 foot-lamberts, although there was some slight increase even at 20 foot-lamberts. Low intensities were found to be somewhat disadvantageous to eyes slightly defective, but at higher levels they appeared not very different from normal ones.

Averaging the results of all observers, Troland[1] arrives at a value of 5·2 foot-lamberts, beyond which further increases in brightness do not yield an appreciable gain in acuity. All of the results included in this average used test patterns which possessed maximum contrast. It has been pointed out several times, notably by Cobb and Moss,[33] that the angular specification of acuity has little significance unless the conditions under which the determinations are made are clearly specified. As an example, discrimination of form is very noticeably affected by the degree of contrast between the object and its background. It is further affected by the brightness level at which the test object is examined, and also by the time of exposure, although the latter is not quite so important as the first two, since exposure times are relatively quite long. Kolbe,[34] Broca,[35] and others have investigated the effect of contrast in this connection, and Broca[35] found that, at an illumination of 4 foot-candles with a contrast of 15 per cent., the acuity was 90 per cent. higher than for a contrast of 0. Cobb and Moss[33] conclude from their results that, within the limits of 1-100 foot-lamberts, visual angle 0·8 to 16 minutes, and for exposure times of 0·075 to 0·300 seconds, the four variables, brightness level, contrast which includes glare, visual angle, and exposure time are mutually complementary. That is to say, a deficiency in one may be compensated for by an increase in one of the others. Luckiesh and Moss[36] have also found that for a given size of test object the contrast necessary for visibility becomes less as the level of brightness increases. Their data show that, for a visual angle of 2·5 minutes, a contrast of 5 per cent. is required for visibility with a brightness of 92·9 foot-lamberts. At a brightness of 0·93 foot-lambert, a contrast of 20 per cent. is needed, or if only 5 per cent. contrast is available, the angle must be 6 minutes.

Conner and Gannoung[37] have examined the course of foveal and parafoveal acuity at low background luminosity and for a number of degrees of contrast between test object and background. Their results indicate that both foveal and parafoveal acuity bear a linear relation to the logarithm of the background luminosity and that contrast is a decided factor. The function increases continuously with increasing background luminosity for the brightness range covered, which was from 0·00013 to 1·0 lumens per square foot. With constant background luminosity, the acuity increases with contrast, but not quite so rapidly as in the former case. The linear relation between background luminosity and acuity has been substantiated by Lythgoe[38] and by Kryswijk and Zwikker,[39] and others.

Ferree and Rand[40] have also recently investigated the relation between acuity and the intensity of light both for

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normal and presbyopic observers. For a brightness range of 0·4 to 80 foot-lamberts, they secured increases of 112 and 160 per cent. respectively, for the two classes of observers. Their results also disclose the fact, which has been largely overlooked, that increases in acuity are not pronounced for young eyes beyond 8 foot-lamberts, but with advancing age that eyes still show an increase at 80 foot-lamberts. These data clearly demonstrate that age has a very important influence on the effect of the intensity of light upon clear vision.

Since patterns of low contrast necessarily involve brightness sensibility, it is entirely to be expected that an increase in intensity beyond that level governed by the laws of brightness sensibility vs. intensity is wasted. Hartridge[41] and others claim that acuity and the laws controlling it ultimately resolve themselves into a matter of brightness discrimination.

Bloom and Garten,[42] and Broca[43] also have studied the effect of adaptation upon acuity and found that dark adaptation does not compensate for low illumination, and consequently does not provide for an acuity equal to that of the light-adapted eye. Pupillary size and time of exposure all have an effect, although it is slight. The influence of colour on acuity has been carefully investigated and the conclusion reached that although there is a difference in favour of the region of the spectrum possessing maximum visibility, the difference is practically negligible so far as the common illuminants are concerned.

The effect of glare, which is a component of contrast and which depends upon the distribution of light, in general, reduces acuity due to the production of local desensitisation of the retina. Nutting's[11] analysis of glare on the basis of pain or unpleasantness resulting from a light stimulus of high intensity showed that the glare point so defined is proportional to the cube root of the brightness to which the eye is adapted. Cobb and Moss[44] find that discomfort due to a glare source is a function of its intrinsic brightness as well as the intensity of illumination incident at the eye. They also find that reduction in visibility by a glare source is greater, as the source approached the line of vision, affecting large objects of low contrast more than small ones in which the contrast is high.

Speed of vision or the ability of the eye to see quickly is another of the perceptual functions with which we are concerned. Visual efficiency as based on reaction time and absolute brightness was placed by Johnson,[45] following a review of the available data, at field brightnesses of between 1 and 2 foot-lamberts, provided the task was above threshold dimensions.

In 1834, Talbot[46] formulated the law that intermittent illumination of the retina yields a luminous impression which is determined by the average energy incident upon it. A large amount of data indicates that the speed with which any degree of visual excitation is approached will increase as the intensity of the stimulus is increased. How important this principle is in determining the illumination level for practical work depends upon an analysis of the actual operations involved; for instance, whether the eye is required to move quickly from one dark area to another in which certain details are brighter.

The persistence of visual sensation after removal of the stimulus has been recognised since early times. In fact, Aristotle made use of the fact in an attempted explanation of dreams. D'Arcy[47] made probably the first serious attempt to measure the persistence of the image of an object, by determining the rate at which a burning stick must be whirled around in order that the impression would be that of a continuous circle of light. Modern technic, however, has refined this method by determining the critical frequency of flicker. Critical frequency is studied by measuring the speed with which a sectored disc must be rotated between a source of light and the eye in order that the sensation becomes that of a continuous light. That the degree of flicker and rate of change of stimulus at which flicker disappears is a function of the absolute intensity has been definitely established from a large body of data. Ferry,[48] Porter,[49] and Ives[50] have independently established that the rate of alternation at which flicker disappears is proportional to the logarithm of the intensity. Lythgoe and Tansley[51] have measured the critical frequency of flicker for both the foveal and peripheral retina during the course of dark adaptation following adaptation to light, and also during the course of light adaptation following dark adaptation. Their conclusions were that the results of the critical frequency of flicker method are in good agreement with the performance of the eye when applied to other visual tasks.

In order that an approach to the ordinary conditions of vision might be secured, Conn[52] introduced the use of confusion patterns in the test field and demonstrated that persistence of vision breaks down under certain conditions so that increased intensities offer no gain in sensibility. His conclusions were that, for the conditions existing in his experiments, visual efficiency is improved up to brightnesses of the order of 32 foot-lamberts. Luckeish[53] studied the speed of reading and found an average increase of 15 per cent. for illuminations between 4 and 16 foot-candles, when the test was, as is the usual case, for black type on white paper. With black on grey paper having a reflection factor of 22 per cent., the result was an increase in speed of 50 per cent. for the same brightness range. Feree and Rand[54] have found quite large increases in speed of vision with increasing illumination and with a proportionately greater gain, as the angular size of the object diminishes. The perception of motion, a close ally of speed of vision, involves a combination of space discrimination and changes in the intensity of stimulation at given points on the retina. Basler[55] found a progressive increase in motion acuity up to 8·8 foot-lamberts.

All available information shows that the voluntary functions of the eyes, such as accommodation, convergence and fixation, do not require high intensities. As evidence of this, Israel[56] found that the average error in accommodation was 1/23 of the total distance for a brightness of 0·00936 foot-lamberts, and that, for both convergence and accommodation, it was about 1/58 of the distance. Although accommodation breaks down at very low intensities, both convergence and fixation continue to the absolute threshold, which will be remembered to be $7{\cdot}3 + 10^{-10}$ candle 1 foot from the eye.

The threshold for the involuntary contraction or expansion of the pupil was found by Engelking[57] to be about 0·0024 foot-lambert. Reeves'[58] measurements show

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that the pupil continues to contract up to brightnesses of at least 1000 foot-lamberts, the extremes being from 8 to 2 mm. Recent measurements by Luckeish and Moss[59] of the pupillary light reflex place the minimum of pupil area to be reached for a field brightness of 465 foot-lamberts and a 17-degree field. Their measurements were made with fixation at the centre of a bright field amid dark surroundings. The area and brightness of the field were varied, but the illumination at the eye was always kept constant at 10 foot-candles. Under these conditions, they found that the pupil area increased by from 20 to 30 per cent. for a brightness change of from 37 to 12,077 foot-lamberts.

While the data which have been presented are by no means exhaustive of the tremendous literature pertaining to vision, they do, however, give us a picture of the situation as regards the elements of major importance in the visibility of objects. The most important factors may be summarised as follows: the angular size of the detail to be discriminated, the contrast or degree of difference in brightness between the object and its background, the intensity of illumination, and the exposure time, although this latter is of little significance in the majority of cases. Almost all of the studies which have been made have depended upon threshold methods for the determination of visual response. While such procedure is valuable, it does not provide us with the means of determining the ideal conditions for maximum visual efficiency. As Luckeish has said in one of his papers: "From the standpoint of seeing, threshold data are of relatively little importance because we are seldom called upon to exercise the limits of visual acuity."

No information is available on the visual functions as they operate while a motion picture is being viewed. Therefore, before any sort of justifiable recommendation may be made concerning the optimum arrangements for visual comfort and efficiency in the viewing of motion pictures, data must be secured under conditions simulating those which exist in the practical situation.

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Continued at foot of next page.

Workmen's Compensation and Non-Manual Workers

DEPUTATION FROM NATIONAL FEDERATION OF PROFESSIONAL WORKERS TO THE HOME SECRETARY

A matter of great importance to film and other technicians was the subject of a deputation to the Home Secretary recently.

Sir John Simon was accompanied by the Parliamentary Under-Secretary, Mr. Geoffrey Lloyd, M.P., and a number of his principal advisers, including Mr. R. R. Ballantyne, C.B., Assistant Under Secretary of State.

The deputation was introduced by the President of the National Federation of Professional Workers, Mr. George Lathan, J.P., M.P. (Chief Assistant Secretary of the Railway Clerks' Association), and the case was stated by :—

Mr. George W. Thomson, the Vice-President (Association of Engineering and Shipbuilding Draughtsmen).

Mr. Stephen W. Smith, General Secretary.

Mr. J. W. Thomas (Electrical Power Engineers' Association).

The case as stated by the Federation's speakers related to the following three points :—

1. The need for amending Workmen's Compensation law so as to ensure adequate compensation for all workers affected thereby, so that such compensation shall bear a proper relation to the earnings of the injured worker.
2. The need for removing the salary limitation.
3. The desirability and even the necessity for making it compulsory upon all employers to cover the liability in question by insurance or its equivalent.

Mr. LATHAN, in his opening statement, emphasised once more, as on previous deputations to Ministers, the handicaps and limitations under which Non-Manual Workers laboured in regard to protective legislation.

Mr. THOMSON quoted several striking examples of anomalies and hardships arising out of recent experience among members of his own association, and followed with some figures dealing with the estimated extent of the suggested changes as advocated by the National Federation. There was, he said, rather less than a 5% potential increase in the total of the number of persons that would be eligible for compensation. And it had to be remembered that this comparatively small addition related to workers whose ratio of accident risk was much less than that of workers in direct and constant contact with the dangerous occupations.

Mr. J. W. THOMAS spoke on behalf of Technicians, largely excluded by the Salary Limitation from Workmen's Compensation law and driven, as an alternative, to seek the protection of the Common Law. Here they were frequently faced with the plea of the Doctrine of Common Employment, under which all too often the employer was able to resist successfully the claim for compensation.

He stressed the emergence in recent years of a large new class in industry of technicians and similar workers. These represented an important and increasing factor which needed to be taken seriously into account in considering the problem of Workmen's Compensation.

Sir John Simon complimented the Deputation on the logical and reasonable case which had been so clearly presented. He mentioned that there was a committee of the Board of Trade at present sitting and examining questions relating to compulsory insurances. Possibly the finding of that Committee may be of value in connection with the subject matter of the deputation.

The Home Secretary was undoubtedly impressed by the case which was placed before him, and while not promising any easy or quick advance in the legislation in question, he made it clear that the points put forward would receive his close and careful attention.

Screen Brightness—*continued from previous page.*

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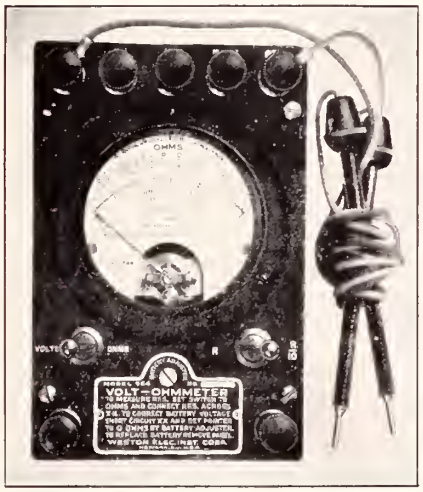

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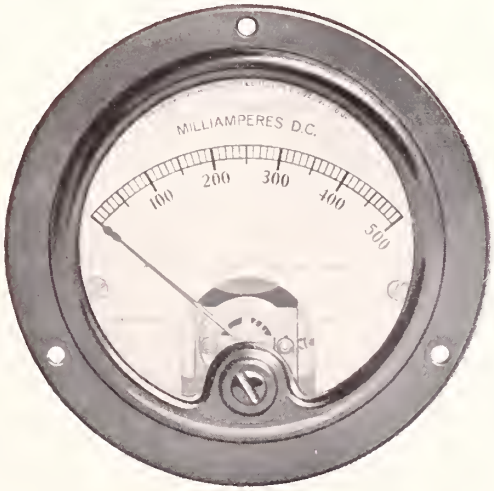

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THE British Chemicolour Process is built up on a method in which photography is carried out in natural colours, that is to say, the colours are not applied mechanically or artificially, but are obtained by photographic means.

The experimental work on the British Chemicolour Process set out from the hypothesis that the colour film can only find general application if its commercial exploitation safeguards the film industry against too heavy commitments and if, in manufacture and duplication, it is made competitive as far as possible with the black and white film as regards time and money.

One of the greatest difficulties encountered in colour cinematography has been the enormous proportion (anything up to 150%) of extra light required, which has not only occasioned high current costs but has also increased the number of special lamps and reflectors needed, viz., from ten to twenty times. Yet, in spite of this, the normal standard of modern cinematography could not be attained.

OTTO KANTUREK.

According to data so far collected and based on highly reliable measurements and on already completed tests (involving 40,000 ft. of film), the actual proportion of extra light required by the Chemicolour Process, as compared with black and white photography, is only 10% to 15%, or even less, and a photographic standard is reached which is in every respect the equal of black and white photography.

The experiments in make-up technique have demonstrated that, in the case of women, the desired first-class quality of skin texture in colour and photography can be obtained with less make-up than is needed in the black and white process, while for men there is no absolute necessity to use make-up at all. In this way the long-standing demand for soft pastel shades has actually been met in the moving film. Naturally, it remains an easy matter to make small subsequent adjustments or corrections in the intensity of the individual colours, without the whole picture being affected. In the application of the Chemicolour Process all errors of focus or depth are avoided in exactly the same way as in the case of black and white films. The images are absolutely sharp and, in their effect of depth, clear and plastic.

The quality of the pictures depends, of course, on the skill and ability of the cameraman. But this quality is guaranteed, as far as the photographic, technical and colour aspects are concerned, by the very fact that, for photography with the British Chemicolour Process, any cine-camera which meets the requirements of modern black and white technique can be used, adapted only by a special device. The chief consideration is, however, that any lighting cameraman possessing ordinary knowledge of colour photography must, after very brief experiments with the Chemicolour Process, achieve perfect results.

Any difficulty in the preparation of release prints in unlimited number, such as hitherto experienced, is entirely eliminated by the Chemicolour Process. Copies can be produced in any number desired and in the same time as black and white prints, yet without injury to the quality of photography or colour.

For the projection of a Chemicolour copy no adaptation or alteration of any kind whatsoever is necessary in the projector, not even strengthening of the projection lighting; on the contrary, a Chemicolour copy can be shewn without loss of quality on any school or home cinematograph projector which, as is well known, carry only an incandescent lamp.

Thus, the British Chemicolour Process really solves problems of the colour film, such as the simplification of technique (possibility of employing any camera; no rotating filters; exposure, development and printing of copies in normal time; and reduction of manufacturing costs during shooting).

In "I Pagliacci," the new Trafalgar Films production which Karl Grune is now directing for world release by U.A. and which I am photographing, sequences will be made in colour by the Chemicolour Process.

There follow further technical details of the new process :—

The British Chemicolour Process is the outcome of experiments extending over many years, during which time technical achievements in negatives, development, lenses, cameras, measuring instruments, lamps, etc., have all

contributed to improve results. In spite of this, however, it was not until the middle of last year that the British Chemicolour Process could be considered perfected. Countless tests of interior and exterior shots, completed under both good and bad conditions, with the co-operation of Otto Kanturek, Alfred Black and Ralph Francke, all A.C.T. members, have proved the process in picture and colour quality a success.

It is a subtractive process based on the four spectral colours of the colour spectrum (Yellow, Red, Green and Blue), and is produced by means of a genuine photographic galvanochemic system. The negative is sensitised to the four colours, and is exposed complementarily, so that after development of the negatives, which are controlled exactly by means of a sensitometer so that they remain equal in intensity and density, the actual print produces the same natural complementary colour picture which was photographed.

The Chemicolour camera is of the modern standard type, with colour corrected lenses, and a device which can guide several negatives through the camera without danger of shrinkage, damage, or any unsharpness, and afford them correct transportation and exposure. Therefore every good standard camera can be adapted and used for the Chemicolour Process. The light balance and the balance of the complementary colours respectively are not achieved by using rotating filters or mirrors, but by the use of a filter in front of the lens on exterior work, and the filtering of the lights in the studio, whenever necessary.

The actual printing of Chemicolour copies is carried out, as in the case of black and white films, by mechanical means, and can be shewn on the screen in colour within 48 hours of shooting.

SECOND

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David B. Cunynghame

Production Manager, London Films, says

"And Still We Need Them"

Mr. Cunynghame forwarded a copy of the following article to the "Journal" and requested that it be given the same prominence as the article in our last issue, entitled "And Still They Come." We replied, expressing our willingness to do this. Subsequently the article was published in the "Kinematography Weekly" on September 3rd, and a reply by the Secretary appeared on September 10th. We, therefore, publish both the article and the reply.—EDITORS.

UNDER the heading "And Still They Come" there appeared in the August-October issue of *The Journal of the Association of Cine Technicians* a report and a summary of a memorandum presented at a meeting which representatives of the Association had with officials of the Ministry of Labour on July 15th.

The point of view of employers of foreign motion picture technicians should, therefore, be of sufficient interest to warrant equal presentation of their case and this may be done under the heading "And Still We Need Them."

The issue is thus at once brought to a head, for it then only remains to be substantiated that there are not immediately available the services of sufficient British personnel in whom present-day successful Hollywood Directors and Stars may reasonably be expected to entrust their careers. It must at the same time be realised that whilst such admittedly "ace" foreigners are under no obligation to work in England, the British Industry needs their support in order to take immediate advantage of the possibility of extending its export trade.

Such a present state of affairs is not surprising when one realises that whilst only three years ago less than a dozen big pictures were made annually in England, the production programmes are now between them resulting in the making of probably over one hundred such films per year.

The "ace" foreign technicians are all individuals with at least ten years' experience behind them and their British colleagues cannot be expected to acquire similar knowledge in a much shorter period, especially when it is realised with what limited opportunity many of them were trained.

In spite of this fact, London Films has been able to organise and hopes to be able to expand a Make-up Department consisting of 100% British Subjects. Likewise, whenever a suitable opportunity presents itself, it not only disposes of foreign labour in its Special Effects Department but places British Labour under contract and sends it to Hollywood so as to ensure availability of the latest technical information.

There are at Denham eleven foreign lighting experts, but as there are also two such British subjects, no doubt the eleven mentioned in the memorandum work somewhere else, as no reference is made to their British colleagues. Moreover, the eleven cameramen employed at Denham are engaged by no less than six different Companies. Of course there is not at Denham any Camera Unit which is entirely composed of foreigners, as stated to be the case in "a particular studio." In fact, the owners of the Denham Studios have been training individuals in all departments for the past four years and in order to enlarge the scope of promising applicants it has for some time past continued the training already given to certain Polytechnic and other students.

Several members of the Camera and Editing Departments have thereby been able to earn salaries which have and are still increasing steadily, both with London Films and as the result of offers from other Companies.

In the memorandum presented by the Association of Cine Technicians reference was made to "a particular studio used by a number of Companies where not a single key position is held by a British Technician, except in Sound." It may, therefore, be advisable to emphasise again the situation at Denham so far as foreign labour is concerned.

There are about forty Departments in the organisation of the London Film Studios, and of these thirty are administered by British Subjects, which is very different to the lot of the "particular studio."

The hourly staff totals approximately 1250, and so far as the Company is aware includes no foreigners.

The weekly staff numbers approximately 533, of whom 45 are foreigners.

The 45 foreigners include two who (with the written approval of the authorities) work in junior positions owing to admitted exceptional circumstances. Every one of the remaining 43 is an ace individual at a particular job which has only been given him after the question has been investigated by the Ministry of Labour Home Office, as well as by the Company which has to pay out extra money by way of transportation expenses and often living as well as Income Tax allowances.

It is usually admitted that Hollywood owes much of its success to the enthusiasm with which it has always welcomed all forms of first-rate talent which might present itself for absorption in the studios and the motion picture industry of other countries has not been slow to realise that the tremendous importance of obtaining the best technicians makes it impossible to reject them purely on the grounds of their nationality.

The writer himself, and he hopes several of his present fellow-British, workers, is most grateful to the American Company which gave him opportunities in France, thanks to the foresight of both the French authorities and French technicians.

The value of foreign assistance is further shown by the great advance which the British Industry has made during the past four years as the result of Alexander Korda's work in England. The Company, of which he has always been the head, has now been able to increase its production interests from a very few films a year to about thirty-five, thereby giving work to many thousands of British subjects. Such a unique record is also due to the technicians who helped to make the pictures which reflected credit on the whole British Industry.

The Association of Cine Technicians should realise that there cannot be a great deal wrong with regulations which render possible such a fine achievement and which should, therefore, be considered well able to provide for any contingencies which may arise.

A.C.T. Reply

DAVID CUNYNGHAME has raised certain important issues on the question of foreigners in British studios.

In the A.C.T. memorandum to the Ministry of Labour definite statements were made with reference to the actual employment of foreigners in British studios, their "ace" qualifications, and so on. Mr. Cunynghame attempts to prove that none of these statements refer to Denham. Frankly, some of them do and, of course, some of them don't. Where Denham was concerned nothing has been written to alter our viewpoint. One point does, however, need clearing up.

A.C.T. Membership

The Association of Cine-Technicians caters only for film technicians and where, for example, we refer to "departments" at a studio, we only mean those which are represented in A.C.T., that is camera, sound, stills, art, editing and cutting, scenario, floor and production (assistant direction and continuity) and laboratory.

We do not claim to represent the "hourly," clerical or administrative staff (other organisations such as the N.A.T.E. and E.T.U. do this), and, as far as we are concerned, they do not enter into our discussion.

Mr. Cunynghame has made the following points :—

> 1. He states that his company "places British labour under contract and sends it to Hollywood so as to ensure the use of the latest technical developments."

I do not know to which class of labour Mr. Cunynghame refers, but nothing would please the A.C.T. more if only his company could extend similar facilities to its technicians. One of our main complaints is that while foreigners can come to England, British technicians are unable to work abroad.

Is it too much to suggest, in view of Mr. Cunynghame's statement, that Denham make some sort of reciprocal arrangement with its Hollywood and Continental contracts whereby for every technician brought to Denham, a British technician should be granted the opportunity to work in the foreign technician's country. Such a policy would be mutually beneficial and would remedy one of our big grievances.

> 2. He claims, quite rightly, that foreign assistance has been valuable in the recent great advance of the British Film Industry ; but we must not blind ourselves through this fact. Because certain foreign "aces" have undoubtedly helped us, it does not follow that they should remain in this country once their usefulness has been served. Further, there is a tendency to worship every foreign technician as an "ace." There is too big a tendency to regard "foreign" and "ace" as synonymous terms. A.C.T.'s claim is that far from all the foreign technicians working in the British Film Industry are "aces."

Mr. Cunynghame, I know, will agree that the main viewpoint in which to regard the value of film production in this country to British industry, is the amount of benefit it brings to British people.

As technicians we were, for example, greatly perturbed last May when there were 150 members of this association unemployed and over 100 foreign technicians working in the Industry. After making allowance for the experts wanted in their own countries, I feel sure that Mr. Cunyng-

(*Continued on page* 111).

JUST PUBLISHED.

COLOUR CINEMATOGRAPHY

By

MAJOR ADRIAN BERNARD KLEIN,

M.B.E., A.R.P.S.,

Technical Director of Gasparcolour Ltd.

This is probably the first book dealing exclusively with colour cinematography, and it should fill a long-felt gap in the literature of photography ; in the past the enquirer having been much hampered by the necessity of consulting numberless technical journals, obscure periodicals, or chapters in rare books. Moreover, in view of the misconceptions which are all too common among those in the industry, it has become quite an urgent matter that a book containing the required information should be made available without further delay.

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Lab Topics

Our Objects

In introducing this addition to the *Journal* we ask the co-operation of all laboratory employees to make it a success. We shall endeavour to keep you informed of what is happening in the Film Laboratory world. As you know, until A.C.T. got going, laboratories were practically isolated one from another so far as the workers were concerned. Now things have changed and it is the aim of A.C.T. to keep its members in touch with what goes on from day to day. Having this end in view we ask your help. Send along news items, suggestions and complaints ; we shall deal with them at the first laboratory meeting after receipt, and if they are of general interest, publish them here. Address communications to Lab Topics, Journal of The Association of Cine-Technicians, 30 Piccadilly Mansions, London, W.1.

New Dupe Negative Process

An article in October's *S.M.P.E. Journal* is entitled "A Film Emulsion for Direct Duplicates in a Single Step." The process is still in the experimental stage and cannot yet be applied to cine film because of the slowness of the emulsion. There are, however, great possibilities in this departure from orthodox treatment. We can foresee the day when duplicate negatives practically identical with originals will be produced in this way. We commend this article to those interested.

A Word of Advice

To lab workers who wish to improve their positions, take our advice and learn all you can about sensitometry. Sensitometric control is becoming more and more an integral part of laboratory processing. It is the only method by which uniformity can be established and maintained. It is also invaluable in conducting experiments, because when any experiment turns out successfully the data is available to repeat that success. There are several books on the market dealing with sensitometry and your "governor" or one of your pals will no doubt be able to advise you on the one best suited to your needs.

The Merger

There have been many headlines in the press with reference to the closer relationships between A.B.C. and G.B. There seems a possibility that Mr. Maxwell will virtually control directly or indirectly three laboratories, Gaumont-British, Pathé and Elstree Film Laboratories. We hope he will take advantage of such increased responsibility by attending to certain grievances among his laboratory workers, especially in regard to rates of pay and opportunities for advancement. There are dozens of lab workers with ten to twenty years' experience earning £3 to £4 per week for highly skilled and responsible technical jobs. They feel justified in grousing when they see youngsters on the production side who, after a couple of years in the trade, are earning £5 and upwards per week, and have the chance of advancing still further. The laboratory is an excellent training ground for assistant cameramen and positive cutters, who eventually have the opportunity to become lighting cameramen and film editors. We should be glad to see such a responsible employer as John Maxwell set in motion some such system of advancement from laboratory upwards. By so doing he would give an added incentive to lab technicians in their jobs. In addition, he would have the satisfaction of knowing that in a few years' time he would have improved considerably the all-round technical ability of his staff.

Process Cinematography

There is no doubt that process cinematography, by which is meant all branches of special and trick cinematography, plays a very important part in present-day motion pictures. Every production makes use of it in one way or another. To our knowledge, British film companies have not given it the consideration it deserves. London Films at Denham is the only firm in the country fully equipped for process work ; their investment will pay for itself over and over again in time and money saved. Process cinematography covers a wide field and includes—optical trick printing, miniature back projection work, composite shots, wipes and dissolves, mattes, multiple exposures, special transition effects, etc.

A book on the subject compiled by leading authorities in this country and U.S.A. would do much to educate the film industry as a whole. It might even lead to the process section becoming an essential part of every studio and laboratory.

Elsewhere you will find an interesting article entitled "Development and Its Chemicals," by Mr. Arthur Jay of Gaumont-British Labs.

Short Ends

There is a handy bridge not far from one film printing lab. We hear that dredging operations are to be started soon to clear the blockage !

In the land of "Promise"—Denham Laboratories.

Conclusion

Let us again ask those of you who have news or suggestions to send them along. Don't just think : "That's a good idea. I'll drop them a line sometime." Do it now !

"GAMMA."

New A.C.T. Members

THE General Council wishes to emphasise that it is essential that all technicians who are proposed for membership of the Association be sponsored by four members of A.C.T.

In the past, this rule has not been fully observed. In future the Council will only in very exceptional cases consider applications for membership when forms are not fully sponsored.

A.C.T. has now over 1000 members, and it should not be difficult for any technician to obtain the signatures of four persons, already members of A.C.T., who consider him a suitable person to be elected to membership.

Walt's Worst

A CHANCE visit to a display of cartoon films brought sharply home to me the difference between the old and the present Mickey Mouse. And it confirmed my opinion that for robust construction and meat, the black and white could give the coloured up to Tattenham Corner and beat it to the post.

Take the two I saw, fair representatives of either sort, "Mickey's Man Friday" and "The Orphans' Picnic." Granted a coloured film like "On Ice" is superb, but it has the same faults as "The Orphans' Picnic," faults arising from Walt's new habit of playing to the level of the orchestra stalls.

There was guts in the black and white, real blood and brains ; now there is Drummer Dyes, dish water and dashes of Daddy's favourite sauce. Oh my ! buzzing with the dollar bee in his bonnet, Disney has gone Mae Westy. Will he buy the world with his gold or only invest it in experiments on robots that can draw ?

Give us this week our weakly Mickey——rats——give it as you used to do, not with a sugar spoon but with a spatula.

Three sighs for the time when Walt did not wilt ; when men were men, and women were choked. No whiskery gags to make children (8 to 80) laugh ; no personality pie ; no fake Jacob's coat of many colours, but corn in Egypt.

Give us black and white corn, coloured corn, any old corn so long as it is not pop-corn. Our throats are thick with chaff, finches unstuffed sing sweetest.

Disney is behind on his contracts : this great artist is now selling it by weight. When gods disappoint their worshippers they appear on the next day's menu. Well, there is plenty of body in this outfit now, but if you are not fond of sheep's brains when you bite, you'll spit.

Dear Walt,

Please send me a teddy bear so I can throw ink at it and rub it on my dolly.

Dear Walt,

Disney (as Schnozzle says) is Disney and the devil looks after the trailers.

Dear Walt,

——very dear——ten fags or a beer and a half and a hen and a half for a day and a half.

Can you recall the roses round the floor and the hotcha girls playing on their cat's whiskers ? Yukan ? we can ; they all can beer and bear him out on a brown bier and berry him.

He was a good lad but they're Dunning him wrong.

So let us Schuffle to pastures new, where the blooms rejoice in the sun and the dolly blues the bay.

So they bring on a cart-horse——what, a stall for a stallion ? Who'll lie in wait for this ? I'm at the last gasp ; ah color ! what chemises are dyed in your shame !

Do you qualify for your asylum ticket by standing a long way from God and seeing a big hole ? I present my complimentaries to orphans—they pick "Nick Carter."

DAVID STEIN.

"And Still We Need Them"—*continued from page* 109,

hame will agree there are probably far less than 100 "aces" in the Industry available for employment here.

For Industry's Benefit

As technicians we, of course, want the film Industry to benefit. All that we ask is at least some sense of proportion when the employment of British or foreign labour is being discussed. Some of the best technical work is being done by British technicians ("A Woman Alone" is a recent case in point where all the technical staff, with one exception, was British), and we are confident that by judicious promotion there are many more British persons who are eager and capable to play their part in producing technically first-class British films. Great Britain is just as capable of producing "ace" Cine-technicians to-day as it produced most of the cinematograph pioneers at the beginning of the century.

In conclusion, may I make a suggestion ? We have recently written to the Film Section of the British Industries, suggesting that a deputation be received from A.C.T. to discuss the whole question of the employment of foreign technicians in the British Film Industry.

We are confident that such a meeting between employers and employees would help to clear up some of the misunderstandings and differences which Mr. Cunynghame's article proves to exist.

As representing over 1000 Cine-technicians, we share with Mr. Cunynghame an earnest desire to build up a flourishing British Film Industry.

Yours faithfully,

G. H. ELVIN, Secretary,
Association of Cine-Technicians.

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NEWNES

Who's Who Amongst A.C.T. Vice-Presidents

IVOR MONTAGU

BURLY, untidy, black-haired, overcoated IVOR MONTAGU is 32. Younger son of Swaythling family—famous Jewish bankers. Would make good banker himself had he not taken up zoology, table tennis, films and politics. Won medal at age of four, as youngest infant at that time to swim length of bath at Bath Club. Educated Westminster, where he studied zoology at South Kensington. Later studied under Lance Hogben at Royal College of Surgeons. Then King's College, Cambridge. Failed on most exams., but was given B.A. standard for Zoology. Finally took degrees in English and French, two terms before his proper time. Had to stay at Cambridge to prove diligence. Found lectures sent him to sleep, so was permitted to do original research. Forgot original research until last week of last term. Spent last week measuring skulls of beavers to nearest 1/100th of a millimetre. Original research passed as O.K. Took up table tennis because he thought he was good at it—better than anyone else. Found he wasn't, but all the same remains chairman of International Advisory Council of Table Tennis. Went out to look for mice in Caucasus and thence to films. Founded Film Society with Sydney Bernstein, Iris Barry, Angus MacPhail, Adrian Brunel and others. At last moment George Atkinson—film journalist—accused Film Society of digging into well-known Moscow gold. Atkinson had to publish apology and Film Society flourishes. Founded *Brunel and Montagu* who handled all kinds of foreign re-editing jobs. Knackers for the film industry, as Ivor describes them, and known widely as Brunel and Montagu. Cut *Lodger*, early Hitchcock silent with only thirty titles—unheard of feat at the time. Made three silents for Rowson in 1929. Best known is *Bluebottles*. Quota just coming in, so Rowson held shorts up until Act passed. Talkies came at same time. Films missed boat. Until recently Unit Production Manager for Gaumont-British. Sandwiches job in with trips to Moscow, International Table Tennis, translation and many other pursuits. He and another sole members of A.C.T. for two years, in G.B. studio. A.C.T. now booming and Ivor plays important part.

Doesn't like photographs of himself; hence none at top of this screed.

(Reprinted from *World Film News*).

KENNETH GORDON.

DESTINED to be a civil engineer, took up projecting in spare time. Apprenticed Bolak's Press Agency for photography, but continued studies in electrical engineering. Was one of the first photographers on *Daily Mirror* to use photo-telegraphy (under Thorne Baker). Worked with the late Andy Wright Films Ltd. of Liverpool; joined the *Bristol Evening News* as photographic reporter; returned to Films Ltd.; equipped a number of picture theatres. Joined the Gaumont Company for King Edward's funeral, King George V. Coronation. Filmed the Delhi Durbar; filmed and experimented with earliest colour processes—Kinemacolour, Biocolor and Cronocrome.

Was photographer in Balkan War with the Turks, filming and taking press photos for London News Agency and *Illustrated London News*. Mentioned in Ashmead Bartlett's report of the Battle of Lula Bergas in *Daily Telegraph*. Entered production field and photographed a number of pictures for the Brittonia Film Co., and the Magnet Film Company.

Called to the Army, 1914, acted as official cinematographer Royal Tours to the Industrial North, 1917, returned to the Army at end of leave.

KENNETH GORDON.

After Armistice joined official newsreel under Ministry of Information. Founder-member of Kinecameraman's Society, forerunner of A.C.T. War cameraman British North Russian Force. Filmed productions for Walter Ford and Master Film Co. Joined Pathé and was staff photographer in Ireland during the "Troubles."

Now devoting himself to Magazine Film work, and has filmed in Norway, Germany, Belgium, France, Switzerland, Africa and Canada. "Wardour Street," as Connery Chappell says, "contains Ken Gordon, who looms before you like a traffic jam, and blandly cuts off advance and retreat."

D. C. DICKINSON.

"Kind Words Never Die," framed as it was in grandma's days, hung from the camera-room wall. Desmond Dickinson was at home. Explained object of visit. "I like pictures and I like making them. That's all," was the reply. Later, between potting red, black and another red, we learned that just after the war, much against his employer's advice, Dickinson left his job as an office-boy, mounted his bicycle, rode over to Croydon and started in the dark room of the Clarendon Film Company at 15/- per week. First job was cleaning out the drains, technically known as gulleys. There some while and appreciates all-round experience; projecting, film printing (judgment printing on rushes), odd bits of positive de-

veloping, work on "spot" on floor, odd camera assisting. Company went broke, cycled to Cricklewood, very persistent and engaged as camera assistant. Owes a great deal to D. P. Cooper, then cameraman at Stoll's, who "was nicer to me than any man ever has been in my life."

Next few years devoted to work with various companies, travelling and climbing the ladder. With D. P. Cooper on locations to Iceland, Italy and Paris on the "Prodigal Son," which took nine months to make *and made a profit*; with Percy Strong on "Second to None," Jack Raymond's first directorial effort; at Rex Ingram's Nice Studios on a Pathé picture, where also was Lee Garmes shooting his first big dramatic effort, "The Garden of Allah." "This company invited me to stay with them and I would have accepted this job, but I had been in England only eleven weeks during the previous year and wanted to get home. If I had accepted it, I might now have been a *Foreign* technician elsewhere."

More work with D. P. Cooper; a short spell with Arthur Kingston; location to Jamaica with Welsh-Pearson on the *only* British picture being made at that time; then in 1926, first job as cameraman shooting "Carry On," a tale of the Navy for Miss Shurey. Sold bicycle and bought a motor-cycle. Worked with Gainsborough; various jobs as an assistant; back to Stolls at tail-end of silent days as a cameraman. Been there ever since. Contract expires at end of year. Wants to direct and we wish him luck.

Can't publish photograph as "I'm a cameraman and who cares what I look like," mumble, mumble, mumble. . . .

J. C. GEMMELL.

Newsreel ace, known to his friends as "Jock," disapproves of biographies. We must let his photograph speak for itself.

The Kinematography Year Book says: "Gained experience in dark-rooms and laboratory with Warwick Trading Company and Barker's Motion Photography during 1910-11-12. Joined Pathé Gazette, April, 1912. Opened and managed Liverpool Laboratory for Pathé. Photographic officer in R.A.F. during war; discharged May, 1919. Joined Topical Budget, May, 1919. Rejoined Pathé Gazette, June, 1920." Been there ever since. Chairman of A.C.T. Newsreel Section.

J. C GEMMELL.

THOROLD DICKINSON

THOROLD DICKINSON spent most of his time at Oxford staging College plays. Started in films as interpreter and number-boy with Welsh-Pearson in Paris, in the bad old "twenties" when it was cheaper to make British pictures abroad. Wrote half the story and script of his second picture. During the last slump, before the film quota was introduced, had a season in a repertory theatre, where he art directed, stage managed, acted—and was fired. Then returned to films as George Pearson's first film editor. Film editors as such were then practically unknown, the few that existed were foreigners, and directors for the most part cut their own pictures. Has cut almost every known kind of film, including a Universal serial. Chief Editor at A.T.P. Studios from 1933 to 1936. Has just returned from an expedition to Nigeria, whence he flew home, 4000 miles, in five different French aeroplanes.

THOROLD DICKINSON.

Reports that the River Niger, seen from the air, resembles a colour design by Len Lye. Expedition was for exteriors of his first solo directional effort—"The General Goes Too Far"—a Fanfare Production being made at Ealing. Is proud of having introduced George Elvin to A.C.T. Member of the Council of the London Film Society, and for many seasons supervised the technical presentation of their programmes. Is now an independent producer, and has in production an elaborate "Fact and Fantasy" series, which involves Lotte Reiniger, Basil Wright, Len Lye, Berthold Bartosch, Marcel Frischmann, John Gielgud, Carl Koch and many others (including William Shakespeare) and will introduce the music of Stravinsky to the screen for the first time.

British Technicians Get Together During 1936

GEORGE H. ELVIN, A.C.I.S.

TECHNICIANS have their own review of the year elsewhere. My object is to turn the tables and review them. For the first time British film technicians have shewn during 1936 a real sense of industrial co-operation. There have been several efforts in the past to launch organisations of one sort or another. A.C.T. itself was formed three and a half years ago, but the year which is closing is the first to show important practical results, to which, of course, the initial spade work, loyalty and enthusiasm of a small band of visionaries over that period has been an essential contributory factor.

Technicians' Organisations Abroad.

We are behind other countries where, in France and America particularly, technicians have learnt the value of organisation. Conditions of employment and salaries are regulated, technical activities have been encouraged, and the organisations have been sufficiently powerful to control the question of foreign labour by virtually calling a closed shop. But here there is a pleasing development through the friendly contacts which we have been able to establish with kindred organisations abroad. Sound recordist Alex. Fisher was recently in Paris with Jack Raymond on a post-synching job, recording on a Western truck supplied by Bianco Studies. Before he was allowed to work he was politely but firmly asked if he was a member of a trade union. On producing his A.C.T. membership card he was made very welcome and given every facility. Otherwise he would not have been permitted to work. Other technicians should note this and be sure to carry their membership card with them when abroad. It may save trouble both for themselves and their company.

Reciprocal arrangements with technicians' organisations and companies in other film producing countries may be a solution to the foreign technicians' problem to which A.C.T. is forced to devote so much attention. Mention of this will be found elsewhere in the correspondence between Mr. Cunnynghame and myself.

Professional Activities.

Our activities are dual, professional and industrial. 1936 has seen continued progress in the former and important developments in the latter, attention to which could not be commenced on a large scale until membership was sufficiently strong, as it now is.

During the year the *Journal* has grown in size, circulation and prestige. Following advertisements in the *Journal* advertisers have made contact with firms in France and Czecho-Slovakia. Technical Abstracts, issued free to members, is published monthly and has had five issues. Lectures and film shows have been held during the winter. Our professional standing has been recognised on several occasions. For example, we gave evidence before the Government Committee enquiring into the "Quota" Act; we were invited to the Conference convened by the British Standards Institution on Standardisation in the Motion Picture Industry; and we have again co-operated with the Royal Photographic Society in the holding of their Annual Kinematograph Exhibition.

GEORGE H. ELVIN.

Industrial Activities.

Full details of the A.C.T. Employment Bureau were published in our last issue. *Sixty companies and studios have used the Bureau and over 200 members have secured either temporary or permanent employment.* This is one of the big advantages of membership, and to those who may think their jobs are safe for life may I add that a recent registration is that of a technician who had had twenty-three years' experience with a large company now in the throes of re-organisation.

A Standard Agreement has been drawn up during the year. Most employers to-day realise the benefits and advantages of trade unionism—in fact, employers in many industries have trade unions of their own—and are happy to negotiate with a reasonable organisation on behalf of their employees. The film industry is no exception and most studios have agreements with the organisations representing the chippies, sparks, and so on. A.C.T. has endeavoured to set out as a basis for discussion reasonable conditions of employment and salaries which are, in fact, based in some case on existing agreements in Hollywood and elsewhere. Two of the largest employers are already

(*Continued at foot of next page*).

Royal Photographic Society

Annual Kinematograph Exhibition

FROM the list of lectures and lecturers, it will be seen that the importance of this annual exhibition is yearly becoming greater. An informal private view for technicians was held on Friday evening, the 27th November, and in the evening a paper was read by Capt. Round, M.I.E.E., on certain aspects of Sound Recording. The formal opening of the exhibition took place on Saturday afternoon, the 28th November, at 3 p.m., by Anthony Asquith. Selected competition films were also shown. On Tuesday, December the 1st, the British Kinematograph Society arranged an evening show, which was divided into two sections, the first commencing at 7 p.m., dealing with new sub-standard apparatus, and the second at 7.45 p.m., with professional apparatus of recent introduction.

On Tuesday evening, December the 8th, a joint meeting between the A.C.T. and the R.P.S. has been arranged . . . the time being divided into two sections as before, the first dealing with an amateur aspect of the art, and the second with a professional point of view. The lecturers are Norman McLaren and Bryan Langley, respectively. Mr. Langley's lecture is entitled "Studio Lighting for Kinematography." It is hoped that the affiliated societies will make this a good get-together evening, and that much useful information will be exchanged.

On the following Tuesday evening, the 15th, the President of the R.P.S., Dr. D. A. Spencer, PhD., F.R.P.S., will give his Presidential Address, and the subject will be one that is in the minds of many people concerned with pictures at the present time, *i.e.* "The Present Position of Colour Cinematography." This should provide plenty of points for discussion.

The exhibition will close on Saturday, the 19th December, and the last lecturer will be Anson Dyer, who will deal with the "Story of the Cartoon Film," and practical examples will be shown . . . despite his being last, this should certainly not prove to be the least attractive of the shows arranged.

During the period mentioned, the Exhibition will be open daily from 10 a.m. until 9 p.m. (Sundays excepted, of course) and admission is free. Tickets for the lectures, without charge, may be obtained from the Secretary of the R.P.S. at 35 Russell Square, London, W.C.1.

For those members out of London, it is hoped to print a comprehensive survey of the Exhibition in the next issue of the *Journal*, so that they may be in touch with what is happening.

S. W. B.

British Technicians—*continued from previous page.*

discussing agreements with our representatives and it is hoped that this number will be considerably increased by the time that this article is published. "Conciliation, not conflict" has been adopted as the motto of the new organisation of band leaders. We share their views in our own industry.

Appeal to Non-Members.

Membership has been doubled during the year and is now 1200, representing at least 80% of studio technicians eligible to join and a large percentage of newsreel technicians and laboratory workers. We want to reach the 100% stage and to those still outside may I commend the leading article in the *Daily Express* of October 14th :—

> "JOIN YOUR UNION!
>
> The trade unions rise with trade. New membership is already above 3,750,000 mark.
>
> That leaves 14,250,000 workers in this country still outside the trade unions. What are these folks thinking about? They ought to get into the movement. How much trade unionism can do for its members you see this day in the award of the Industrial Court to the Civil Service. Mr. W. J. Brown, secretary of the Civil Service Clerical Association, wins the Government clerks higher wages worth more than a pound a week.
>
> The *Daily Express* urges 14,250,000 British workers to do their duty to themselves."

I trust that the small proportion of film technical workers included in those millions will heed the above advice and make the joining of A.C.T. their New Year resolution No. 1 *and keep it.*

Film Society

THE Film Society, now in its twelfth year, has an unusually interesting programme of films for its new season. At its first performance it showed Ptushko's celebrated full-length puppet film *The New Gulliver* and Pare Lorentz's *The Plough That Broke The Plains*, the film produced in America by the Resettlement Administration; and hopes to follow later in the season with the Russian films, *Youth of Maxim*, by Kozintsev and Trauberg, and *We From Kronstadt*, by Tsigan.

Its next performance is on December 13th, when the feature film will probably be *Hortobagy*, a Hungarian film by Georg Höllering, made in the horse-breeding district of this name. Other films, from which a selection will be made, are Jean Renoir's *La Vie est à Nous*, Julien Duvivier's *The Golem*, Max Ophüls' *La Tendre Ennemie*; two Indian films, *My Beloved* and *Regeneration*, and a Chinese film, *Silk*.

The shorter films will include some representations of tribal life from South Africa, some avant-garde films from Poland, a film of the working of the eighteenth century Royal Swedish theatre, as well as new work from Spain, France, Germany, U.S.S.R., America, Czecho-Slovakia and Great Britain.

During its last season the Society showed Vertov's *Three Songs of Lenin*, Kuleshov's *The Great Consoler*, Dudow's *Soap Bubbles*, Jean Vigo's *L' Atalante*, Marcel Pagnol's *Joffroi*, and other films of outstanding interest, many of which have not been shown elsewhere in this country.

We congratulate Basil Wright and Sidney Cole, members of A.C.T., on their election to the Council, which already includes A.C.T.ites in Thorold Dickinson and Ivor Montagu. Other newcomers to the Council are Robert Herring and Elsie Cohen.

This season the Society has arranged to co-operate with the Film Group in the reciprocal provision of classes, lectures and other practical facilities for the study of film art.

The policy of reduced rates of subscriptions for film technicians is being continued and the remaining performances of the season will be held on January 10th, January 31st, February 21st, March 14th, April 11th and May 2nd, unless otherwise announced.

Cameraman Exonerated

A CASE of considerable importance to cameramen was recently heard before the King's Bench Division, and judgment was given on November 16th. Miss Peggy Crawford, film actress, sued Criterion Film Productions Ltd., and Mr. Gunther Krampf, lighting cameraman (a member of A.C.T.), claiming damages in respect of an injury to her eyes during the making of the film "The Amateur Gentleman," in which she appeared as a "crowd artist" in a ballroom scene. The case was that her injury was caused by the lighting system, and was due to the defendants' negligence and breach of duty. The defendants denied the allegations.

Mr. Justice Porter awarded Miss Crawford £126 19s 0d against the Company, and found that her injury was due to a system of lighting adopted by the Company—a system adopted to obtain a good picture, though the Company recognised its risk.

Judgment was given for Mr. Krampf, and Mr. Justice Porter said there was no negligence by him. He was awarded costs, which were to be added to those payable by the Company.

Church and Film Studio

THE BISHOP OF BUCKINGHAM (the Rt. Rev. P. H. Eliot) writes in *The Oxford Diocesan Magazine* :—"The huge film studio at the other end of the Parish of Denham is going to present a considerable problem. A site has been secured for a Mission Church. All the Church Builders are asked to renew their efforts and to secure the support of others."

Now Lighting

WE are pleased to hear that A.T.P. Studios have recently promoted a whole camera crew. H. Marshall, the second assistant is now first ; Peter Brierley, the first assistant is now operating, and the operator, Gordon Dines, is now lighting. We are always glad to see the younger British technicians getting a break.

ALAN E. WHITE

SPEEDWELL 3924

Camera, 1st Assistant and 2nd Operator to
Curt Courant, T. H. Productions, Elstree

Recent Pictures: "SPY OF NAPOLEON."
"MAN IN THE MIRROR."
"SHE GOT WHAT SHE WANTED."

'PHONE: GERRARD 2366

For all Technical Staff Requirements

A.C.T. EMPLOYMENT BUREAU IS THE ONLY TECHNICAL FILM EMPLOYMENT AGENCY LICENSED ANNUALLY BY THE L.C.C.

Accurate Records of available Technicians in the following Departments :—

CAMERA SOUND NEWSREEL LABORATORY
SCENARIO TELEVISION ART STILLS
EDITING AND CUTTING FLOOR AND PRODUCTION

OVER SIXTY STUDIOS AND PRODUCTION COMPANIES
HAVE ENGAGED STAFF THROUGH THE BUREAU DURING 1936

ASSOCIATION OF CINE-TECHNICIANS

30 PICCADILLY MANSIONS, 17 SHAFTESBURY AVENUE, LONDON, W.1

A.C.T. Winter Programme

The usual programme of lectures and film shows is being held during the Winter.

The following fixtures have been held :—

Thursday, Oct. 15th—"Voyage au Congo" (an early French travel film).

Thursday, Nov. 5th—"Some Recent Developments in Sound Recording Equipment" (by Mr. W. H. Clarke of R.C.A. Photophone Ltd.).

Thursday, Nov. 19th—"Sous les Toits de Paris" (by courtesy of Wardour Films Ltd.).

The following are future arrangements :—

Thursday, Dec. 17th—Film Show.

Thursday, Jan. 7th—Lecture.

Thursday, Jan. 21st—"Blackmail" (by courtesy of Wardour Films Ltd.).

Thursday, Feb. 4th—Lecture.

Thursday, Feb. 18th—Film Show.

Thursday, March 4th—Lecture by Capt. H. J. Round, M.I.E.E., Director, Technical and Research Processes, Ltd.

Thursday, March 18th—Film Programme of Documentary and other Shorts.

Thursday, April 1st—Lecture by Mr. Alfred Hitchcock.

Thursday, April 15th—Film Show.

All the fixtures will commence at 9 p.m., and will be held at the Crown Theatre, 86 Wardour Street, W.1, by kind invitation of Mr. Victor M. Gover.

Admission is by production of a fully paid-up Membership Card.

Television Technicians

SEVERAL enquiries have been received as to the class of television worker eligible to join the Association. The following list has been drawn up by the Television representatives and accepted by the General Council :—

Transmitter.	All engineers engaged on television broadcasts, Vision and Sound control.
Telecine.	Operator. Vision and Sound engineers.
Spotlight.	Operator. Studio control. Vision and Sound engineers.
I. F. Transmitter.	Cameraman. Engineers (V. and S.). Process chemist. Sound Recordist. Studio workers. "Mike" control. (Not electricians.)
I. F. Projector.	Vision and Sound engineers. Process chemist.
Electron Camera.	Operator. Vision and Sound engineers.
Research and Labs.	Designing engineers and Draughtsmen. Thermionic engineers.

In addition to the above list there are the general technical departments for which A.C.T. already caters, such as :—Scenarists, Film Library, Editing and Cutting, Production Managers, Assistant Directors.

WE HAVE

INKY LIGHTS FOR HIRE

BROADSIDES

2 KILOWATT 3 KILOWATT 5 KILOWATT

INKY AND ARC SPOTS

With or Without Labour

Special Quotations for Commercial Films.

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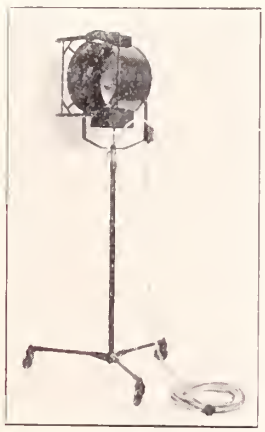

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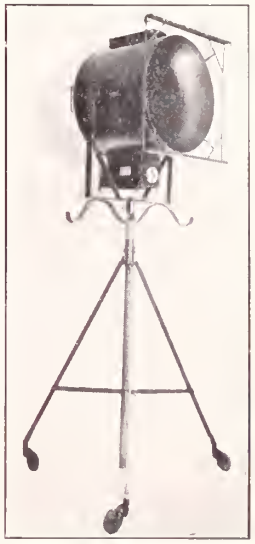


5 KW.

W. PITCHER, 181 Blackfriars Road, London, S.E.1

Cinema Log

The Big Deal

Claim and counter-claim, the Press quoting £24,000,000, as if the film industry was an elixir, thousands of cinema workers engaged by the participating interests wondering in a bewildered way how their jobs will be effected, British production units going slow—this is how the "Big Deal" leaves the industry at the time of going to press.

Yet the financial success of the 600 odd theatres involved, whoever gets them, is dependent on good pictures being shown by first-class projection and the courteous reception of those patrons that the show attracts.

Motto for Managers : *Good* pictures can only be made by qualified artists and technicians, contentedly working with modern apparatus. "You cannot fill a theatre for long with bad pictures."

* * * *

Points from the Rapier of G.B.S.

George Bernard Shaw, speaking on films when taking the chair at a recent lecture, said "The screen had brought quite a new technique in the art of speaking—of diminution rather than exaggeration."

"We have too much of people who speak in the same way," he said. "When I cast my plays I have a soprano, an alto, a tenor and a bass. The film must do the same."

"When actors really understand what they are saying that is a great help too. Sometimes I think it is a pity that audiences cannot throw dead cats and ginger beer bottles at screen actors."

"Films are a wonderful art—so great, in fact, that anyone in the business who realises it is usually kicked out of the studio."

Our only comment is—Why only *ginger* beer bottles ?

G. B. S. explains "Why Ginger-Beer Bottles."

* * * *

Treaty signed at Pinewood

Few people know that in the Club at Pinewood Studios was signed the Irish Treaty, which founded the Irish Free State and ended the "Black and Tan" troubles in the "Distressful Isle." Col. Grant Morgan then owned the estate, where he entertained lavishly the political leaders of the day. A brass tablet in the hall commemorates this historic event.

* * * *

Incognito

The claim made in the *Sunday Express* by Mr. Austin Dennis Harry Courtney, Clerk in charge of Wardrobe at Denham, to be the Earl of Devon, brings to mind the fact that a number of heirs to the Peerage are working on the technical side of the industry. Known to their colleagues as plain Bill or Jack, they have obtained their jobs without influence or wirepulling ; some are at the top of the tree, others are building a reputation for themselves, sharing the hardships of the lower technical jobs as they learn their profession.

Their names are sometimes found in the A.C.T. unemployment books when periodical cuts take place in the studios.

Such is the fascination of picture-making.

* * * *

Colour Needs Discretion

Viewing a number of colour films in the last few weeks, I have been struck with the bad rendering of the fleshings, faces in some cases look like those of sea-sick Chinamen and in others sunburnt Red Indians, yet, in places, perhaps one face in a crowd will look quite natural. It looks to me like too many experts spoiling the "hash." I feel that neutral backing in dove or silver grey would give far better rendering of artists in colour sequences. Set build-up can always be helped by the discreet use of coloured lighting from 2 kw. sun spots. A colour film does not need to look like a rainbow trying for bigger and better things.

* * * *

We Told You So Three Months Ago.

With the announcement that a British bank syndicate is taking a financial interest in M.G.M., purchasing 350,000 shares held by Loewe's Incorporated, involving about £400,000, it is understood that M.G.M. will produce pictures in the Amalgamated Studios, Elstree. This, with the Joe Rock new Studio, makes Elstree the heart of film production land.

* * * *

The Foula Unit in World's News.

Last quarter we told you about the Joe Rock unit filming "The Edge of the World" ; now they are all home again, after being marooned on the island by the rough weather. Food ran short, and everybody had a very anxious time, as the "S.S. Vedra," the unit's depot ship, was unable to take either equipment or personnel off.

The filming on this island has changed the inhabitants' whole economic position. The locals have been able to purchase, with the money that they obtained from the Film Company, much needed agricultural equipment, seeds and stores. These hardy islanders have had very bad times and future harvests will ensure the remembrance for years of the film people's visit.

Am glad to hear that one of the unit has promised us an article for a future issue of the *Journal*.

Kenneth Gordon

Filmland's Mayors.

The film industry has quite a number of trade personalities holding the high office of Coronation Mayors. Of course, Sir George Broadbridge, Lord Mayor of London, was the founder of the Broadwest Film Company, and still has financial interests in theatres and film production. Mr. R. S. Howard Assistant Editor of the "Gaumont British news," has been elected Mayor of Chiswick and Brentford. Councillor F. J. Spickernell, noted exhibitor, is Mayor of Portsmouth ; Councillor W. H. Heath, who has varied cinema interests, is the Mayor of Wandsworth, and W. F. Sanger, father of Movietone's Editor, is Mayor of Surbiton.

Technicians at Press View.

Glad to see that Alexander Korda, unlike some other producers, did the proper thing and invited his technicians to the press view of London Films' production "Rembrandt" at the Leicester Square Theatre. Paul Holt's "Show Talking" in the *Daily Express* said that "Korda paced up and down the back of the theatre like a caged tiger. He told me he was more nervous about how his own technical workers would revive the film than he has ever been before at a star-studded socialite first-night. In the theatre were sound experts, cameramen, make-up experts, cutters, floor secretaries, electricians, plasterers and carpenters, each watching for the minute, maybe the viewing for a fraction of a second, the part that they had contributed to the film. Yes, watching their jobs go by in front of their eyes. Then they clapped and as the tension broke they clapped harder, and Korda pushed his hat a little farther back on his head."

Albert Arch.

Pleased to hear of the great progress made by Revelation Films, who have built up a reputation for colour cartoons for British advertisers, as well as producing many black and white technical and commercial subjects which have been the object of very favourable comments in the trade press from time to time. Mr. Albert H. Arch, who has been in charge of production since the inception of the company four years ago, has been a member of A.C.T. since the early days.

ALBERT H. ARCH.

J. B. McDowell.

After a number of years' service with the Agfa Company, Mr. McDowell is now dealing with the American negative stock handled by Mr. N. H. Stubbs of Welwyn Garden City. All those interested can get in touch with him through A.C.T.

An Oasis for Producers of Shorts

Just heard from Frank Green, Ace Films genial Managing Director, about the number of films that they have produced since they took over and reconstructed the Albany Street studios.

"Diggers for Gold," "Bottle Party," "Full Steam" and "Revudeville" are some of the four-thousand footers that make a good record from this outfit, which works in a studio just ten minutes from the West End.

Equipped with Visatone Sound Gear, recording both open and silent tracks, a mobile sound truck for exterior shooting and modern re-recording, dubbing, and post-synchronising facilities. The two stages have ample lighting facilities fed by both A.C. and D.C. mains, allowing ample illumination for colour sequences. The dressing accommodation allows for fifty artistes. Suitable cutting rooms are a great attraction for the free-lance producer, and the permanent A.C.T. technical staff lift the usual production troubles from his shoulders. Ace Films' own distributing organisation is available for the handling at attractive terms of the finished product.

Alibi

A film studio complete with camera and recording equipment has been fitted up at police headquarters by the Chief Constable of a big area in England, where records will be made of alleged drunks. This scheme is to be tried owing to the considerable number of "drunk" cases dismissed by the magistrate, due to the conflict of medical evidence.

Films taken during the medical examination of the accused and sound records of his speech saying "British Constitution," when shown in court, it is claimed, will be concrete evidence as to the condition of the defendant.

It is now up to the defending solicitor to call expert witnesses from the Film Trade to give evidence for the defence.

I am sure some of our experts can prove at length that the slurring speech is due to a technical hitch in the recording gear, perhaps a small speck of grit in the bearings and the "bleary" expression and jerky movements of the accused due entirely to bad lighting and camerawork.

The price of camera and sound experts will, I am sure, rise to tremendous heights owing to the demands of police and solicitors. This looks very good for British Technicians, because technical evidence, when interpreted from some foreign tongue into English, is likely to get rather muddled.

Ivor Montagu can write a "Technical Dictionary of Filmisms for Lawyers" and Scotland Yard must offer at least £50 per week for real experts.

Conflicting medical evidence is no problem to cine-technicians who, if put to it, can prove pink is white and a razzberry no sound at all.

I pity the Chief Constable.

Sound Recording

News from Western Electric

THE new type "QB" Portable Sound Film Recording System will be used at many of the new studios, including Denham, Pinewood and Amalgamated. Embodying numerous features of its predecessors, the type "F" and "FB" systems, the "QB" system represents the latest trend in film recording apparatus.

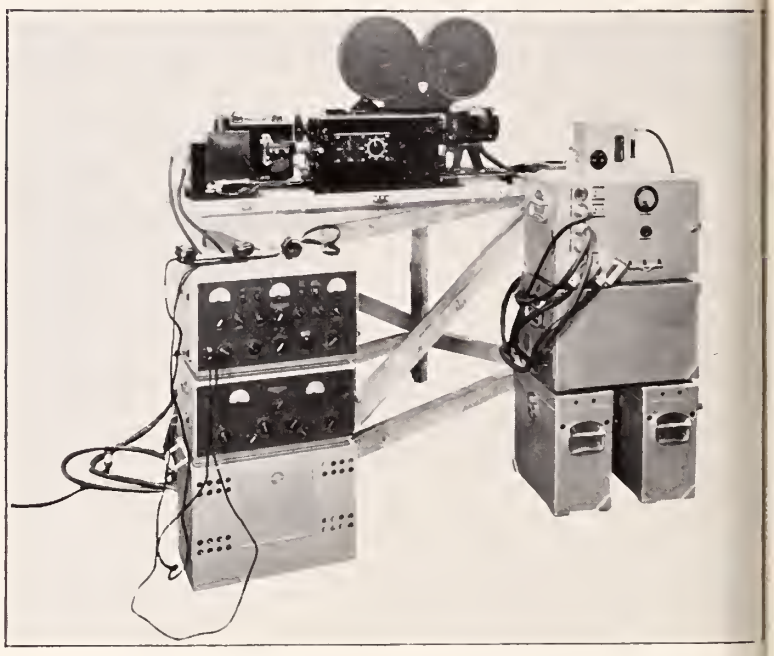
The entire amplifier system has been re-designed electrically, the units modernised and many new features added to facilitate operation and maintenance. Refinements previously available only in studio operation are also incorporated. The mixer operator is given the choice of direct or photo-electric monitoring using a high quality moving coil headset, and provision is also made for an extension headset to the boom man to assist him in locating the correct microphone position during takes. A novel order wire feature is also included in that the mixer operator, through his subset, may speak to the boom-man on the extension headphones by pressing the appropriate key on the mixer panel. Similarly, the mixer operator and recordist may converse with each other whilst wearing the monitoring headsets, thus obviating the necessity of removing the headsets to operate the order wire telephone.

A reduction in the number of units employed is obtained by incorporating in the mixer unit three single stage pre-amplifiers rendering unnecessary the use of external microphone amplifiers. Provision is made, however, for the use of one external amplifer when desirable on long distance operation. Either the Western Electric 618-A Microphone or a new type non-directional 630-A Microphone may be used. Both are high quality moving coil microphones, the latter providing great freedom of movement on the part of actors relative to microphone position without affecting sound quality.

Variable dialogue equalisation, high pass filter for elimination of set resonance effects, and low pass filter to offset light valve resonance are included. Ample facilities are available for checking light valve operation, which include a multi-frequency oscillator with a fixed 1000 cycle output for making overload tests and setting noise reduction, and a variable frequency output for checking light valve tuning. An overload bridge, which may be inserted in the photo-electric monitoring circuit, provides a more sure determination of the clash or overload point by making quite audible the harmonics generated by the light valve when overloaded. The comparator feature has, however, been retained in the photo-electric unit, providing a second means of performing the foregoing tests, and a further stage of push-pull amplification additional to the one in the unit permits split beam monitoring at a higher volume than has been hitherto available in portable recording systems. New type high-speed power level indicators supply the visual means of checking transmission volume, these meters operating with remarkable rapidity, and practically no ballistic overswing. Plate currents and filament and power supply voltages are read on "percentage" calibrated meters, with rotary switches to select the desired circuits. A meter shunt in each circuit is so arranged that the normal meter reading is 100 per cent., irrespective of the magnitude of current or voltage undergoing test.

Improved type carrier operated noise reduction is employed. This unit utilises new types of valves, pentodes, and duplex diode triode, replacing the straight triodes and copper oxide rectifier formerly used.

Four units are used to accommodate the apparatus so far described, these being the Pick-Up Unit, Main Amplifier, Recorder Control and Noise Reduction. All units are contained in sturdy duralumin cases provided with either carrying handles or removable straps. Front panels are finished anodized grey and a judicious use of chromium on the fittings and for indicator bars inserted in the black control knobs adds a very pleasing finish. All valves are of the heater type and may be operated either from light weight portable 12-volt batteries and banks of 180-volt dry batteries mounted in suitable carrying



WESTERN ELECTRIC "Q.B." PORTABLE RECORDING CHANNEL.

cases, or from 110-volt A.C. power supply when this is available. Portable power units are provided to supply the necessary rectification and filtering for A.C. operation.

The recorder is the standard studio type machine, modified for portable operation and provided with a duralumin carrying case. Permanent magnet light valves are used and the split beam photo-electric cell monitoring unit is an integral part of the recorder.

Twelve volt D.C. interlocking motors are supplied for driving the recorder and cameras and also an alternative type of recorder motor which operates from the studio motor interlock system. A portable distributor motor and speed regulating cabinet ensures extremely accurate speed regulation and synchronisation of the twelve volt motors.

Contracts have been obtained for the installation of the "H" type transportable equipments aboard four ships

(*Continued at foot of next page*).

Twenty-Five Years with One Company

Hearty congratulations to Mr. Frank A. Bassill, A.C.T. member, who celebrated his twenty-fifth anniversary with Pathé Gazette on November 11th. He joined the Warwick Trading Company in 1908, was with Barker Motion Photography for a short time, and joined Pathé's in 1911. Has visited most countries in Europe. Official kinematographer to British armies in France and was wounded whilst taking pictures. Visited Egypt during war and secured "The Watch on the Nile," which became a famous picture. Attached to Royal Party in Duke of Connaught's tour of India. Started at the bottom, served in all departments of the trade—projection, dark-room, studio and topical, knows the newsreel business from A to Z. Covered all major stories as senior cameraman to Pathé Gazette.

Presented with a silver plate by his colleagues to commemorate his quarter of a century's service.

The friendly relations between the press and the screen was shown in the telegram which Mr. Bassill received from The British Press Photographers' Association, sending him, on behalf of his many Fleet Street friends,

"Hearty Congratulations on your Jubilee and Best Wishes for your future Health and Happiness."

Glebelands

"Glebelands" satisfies a great need of the film industry. It is used as a permanent residence for members of the trade, who are no longer able to undertake active employment, and is a convalescent home for members of the trade of all ages, recovering from sickness, operations, etc., or requiring a restful change for any reason. The benefits of "Glebelands," situated at Wokingham, Berks, are available to any individual who is earning his or her livelihood in any section of the Cinematograph Industry, whether it be theatre, office, factory or studio. A member of our Association was one of the first technicians to take up residence. A.C.T. has given a donation of five guineas and it is hoped that members will also find themselves able to help this good cause. The London address is 52 Shaftesbury Avenue, W.1.

We have received glowing reports from our member and are pleased to hear that "Glebelands" is as free from restrictions as possible, that there are already installed comfortable recreation rooms, billiard room, library, lounge and a fully-equipped Talkie-Projection outfit, whilst the "local" is just sufficient distance away to work up an appetite.

Miss Winnie Pearson

Members will be glad to learn that Miss Winnie Pearson (daughter of George Pearson, the well-known director), Mr. Elvin's secretary at head office, is in harness again after three months' absence through illness. We are very glad to see her back again fit and well.

Sound Recording—*continued from previous page.*

of the P. & O. Company and also four ships belonging to the Orient Steam Navigation Company.

Each installation includes double projector equipment, non-synchronous unit and very comprehensive operating box and screen accessories. These contracts have been placed following extended experiments in projecting pictures at sea in all weathers.

Maritime Servicing Agreements have also been signed whereby routine and servicing inspections can be given to the installations at any major port of call throughout the world. This is an important feature, as many of these ships are away from this country for long intervals during cruising seasons, and other ships of the P. & O. line have been installed with Western Electric and two of Orient Steam Navigation Company.

Large numbers of passengers will be entertained next year, when our Colonial friends cross the water for the Coronation ceremonies and passengers leave the Homeland for the Delhi Durbar.

Recent Publications

Successful Film Writing, by Seton Margrave. Methuen, 6/- net.

Mr. Margrave has certainly come to the rescue of the aspiring film writer. He has, in this little survey, listed out briefly but accurately all the points and pitfalls of screen story-writing. In contrast to so many other books aiming to teach "films," he does not beat about the bush, but states his views clearly and concisely.

And very sane views they are. "In writing for films," he says, "you write not for but with your audience." This is quite true, but the great difficulty of the film writer is to know what kind of an audience to write with. Eighteen and a half million people visit the cinema every week in Britain, so the answer is not easy to find. Mr. Margrave is a film critic, and has therefore the nearest contact with the audience of any branch of the film trade. He has used this contact to create for himself an "Average Film-goer" whom, he says, "is interested in himself and he would very much like the film writer to present that self in happier and more heroic circumstances than he finds in drab reality."

The writer himself is compared with a motorist in heavy traffic. "The speed position of such a motorist is governed by the circumstances around him. . . . He will not diverge from his line. He will neither overtake nor be overtaken." This seems to me to be as apt a summing up as any I have heard. Again, while he is urging the writer to introduce his theme and characters as early as possible in the story, he quotes from Plutarch: 'When Demosthenes was asked what was the first part of oratory, he answered, 'Action,' and what was the second, he answered, 'Action,' and what was the third, he still answered, 'Action'." If a film writer remembered only this, he would be a long way on the road to success.

But Mr. Margrave really hits the nail on the head when he emphasises the importance to the writer of thinking in length. This is a quality so easily forgotten when one's story is becoming interesting. The finished scenario in the book shows the exact length of every scene. This should be of the greatest help to students.

In planning his book, Mr. Margrave has selected one story, that of "The Ghost Goes West," and as well as his own chapters on film writing, he has reproduced first the original short story, then notes on the cinematic qualities of the story by René Clair. This is followed by the first film treatment and lastly comes the finished shooting script. This method certainly makes for clear explanations, and is an excellent one so long as the reader bears in mind that he cannot learn everything from the study of one story. For instance, Mr. Margrave states that it is impossible to introduce a new character into a film after the first half of its length. Generally speaking, this is true, especially in the case of mystery films. But even in "The Ghost Goes West," Miss Shepperton does not appear until the ninth reel, and in "The Great Ziegfeld" his second wife is not introduced until we are well into the second half. So one cannot say that it is impossible. This, however, is only a small point.

Altogether I can safely say that all those who want to write for the films would be very well advised to read and digest this excellent book.

LEIGH AMAN.

Film and Theatre, by Allardyce Nicoll. Harrap. 7/6 net.

The author of this work was formerly Professor of English Language and Literature in the University of London (East London College) and is now Professor of History of Drama and Dramatic Criticism at Yale University. He is renowned as an authority on the Theatre and in this book he gives a keen evaluation of the film and its connection with the spoken play.

He traces its roots back even to Shakespeare's time, devoting a chapter to "Shakespeare and the Cinema," wherein he says: ". . . in the late sixteenth century the Elizabethan stage occupied a position by no means dissimilar to that taken in our own times by the cinema"; "the public was a motley one and the stage commercial, by its profits attracting to it many men in no wise talented dramatically or otherwise eager to serve the theatre's cause. Amid such conditions Shakespeare's masterpieces were produced." In this book, as he explains, he has sought to present, in as simple and unelaborated a manner as possible, what appear to be the basic principles underlying artistic expression in the film; and, secondly, to relate that form of expression to the familiar art of the stage.

I can thoroughly recommend this book to all those interested in the aesthetics of the art of the film, but to those purely technically-minded it offers little or nothing. In the appendix is a bibliography which covers a wide scope of writings on the cinema and includes over a thousand titles—a truly remarkable list.

Professor Nicoll's "British Drama" was probably one of the finest outlines of the history of the English drama that has ever been published and this, his latest work, will rank as of equal importance on the subject of the basic difference between the theatre and the film.

LOVAT CAVE-CHINN.

The Use and Misuse of Films (Encyclical Letter of His Holiness Pius XI.), Catholic Truth Society.

Films and the Labour Party. Paul Rotha. Labour Party, Transport House.

These two pamphlets are significant reflections of that dissatisfaction with the social rôle of the commercial film industry which comes from different sources and despite its lack of recognition by the industry is, I believe, growing considerably. The rise of the Film Society movement in the last five years is another manifestation. The Roman Catholic Church, as is well known, seeks to express its dissatisfaction by influencing the industry in the direction of Catholic morality by the censorship power of boards of review, such as the Legion of Decency in America, which classifies as "desirable" or "undesirable" all films in the U.S.A. offered for public exhibition in the cinemas. The present Encyclical is the spearhead of a movement to extend this practice from the U.S.A. to the entire Catholic world.

The attitude taken in the second pamphlet, on the other hand, is that neglect by the commercial film of the outlook of large sections of the population can only be met satisfactorily by the building up of a film movement outside the financial domination of commercial film interests, beginning with the exhibition of approved films and de-

veloping later into the production of the required kind of subjects.

Technicians and the industry as a whole would do well to study these pamphlets and think over their implications.

S. C.

ROTHA'S PARADE

OUTSIDE actual film libraries this book (*Movie Parade*, by Paul Rotha, The Studio Ltd., 10/6 net) is probably the most comprehensive record of cinema history in existence under one cover.

Mr. Rotha has arranged his book in a semi-chronological order and deals with every phase of film production from Slapstick to Avant-Garde, from Drama to Fantasy, introducing each section with a brief resumé of the subject. The amount of research necessary to produce this work must have been enormous, as is evidenced by a quick glance at the formidable list of acknowledgments, in which almost every big film company is represented. To the technician this book will serve as a reminder that modern conditions have not always obtained and that present-day motion pictures have their roots in such films of the past as "The Great Train Robbery" and "The Diamond from the Sky."

Movie Parade is a pictorial history, illustrated by text, thus reversing the usual formula. That all too brief text leads one to hope that some day Mr. Paul Rotha will give us another volume, which will serve as a starting point for all newcomers to the Industry.

Two illustrations from *Movie Parade* will be found elsewhere.

T. S. LYNDON-HAYNES.

DRIVEN MAD BY HIS OWN GREATNESS.

Star Turn by René Clair. Chatto & Windus, 7/6 net.

Written in 1925 before he achieved fame as a film director, but only recently translated into English, this book owes its appearance, so the author tells us, to the obligation to deliver a book in return for a generous advance of money by a rash and kind-hearted publisher.

The story centres round Cecil Adams, the world's most famous film star, who conceives the brilliant idea of making a film with God as the hero and himself in the title-rôle, in order to escape the tyranny of *becoming* the characters he acts. The idea miscarries. Religions Inc. distribute the film and put religion on a sound business basis. Our hero ascends into Heaven, descends to purgatory, and finishes his days in a monastery.

Some people won't like the book—that is obvious. Those who have no objection to its theme should like this flippant fantasy written in a style that will at least make them hope that another publisher will, by similar methods, if necessary, get another book out of René Clair.

The preface, written this year, contains many shrewd observations which will amuse film technicians and—may set them thinking.

G. H. E.

Back Numbers

THERE are a few back numbers of the *Journal* available, which may be obtained at 9d each, or 6d to A.C.T. members (11d and 8d post free, respectively). One or two bound copies of Volume One are available at 7/6.

Reading Room and Library

WE now receive regularly the important British and foreign trade and technical press which are always available for members to read at the Association's headquarters. These include "The Cinema," "Daily Film Renter," "Kinematograph Weekly," "Cinematograph Times" and "Daily Studio Bulletin"; "Photographic Journal," "Photography," "British Journal of Photography," "Sight and Sound" and "World Film News"; "La Cinematographie Française," "Journal of Society of Motion Picture Engineers," "Motion Picture Herald" and "American Cinematographer."

The following year-books may be consulted:—"Kinematograph Year Book," "Alliance Year Book," "Photographic Almanac," "Spotlight" (quarterly), "The Year's Photography," "Photography Year Book," "Le Tout-Cinema" and "International Motion Picture Almanac."

Recent publications may be borrowed by members and include:—"Colour Cinematography" by Adrian Klein, "The Art of Film Production" by Andrew Buchanan, "Popular Television" by Barton Chapple, "Documentary Film" by Paul Rotha, "Soviet Cinema," "Star Turn" by René Clair, "Photography To-Day" by D. A. Spencer, "Film Production" by Adrian Brunel, "Movie Parade" by Paul Rotha, "Film Music" by Kurt London, and Minutes of Evidence (volumes 1 and 2) taken before Departmental Committee on Cinematograph Films (The Quota Act).

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Pog Marches On

LAST issue we reported Pog burgled his copy. This time he hasn't sent us any. No Pog, no burglars, no cracks and the eve of putting the *Journal* to bed—not that sort of bed either. Spies were hastily dispatched to Wardour Street and Wapping, whence the following.

* * * *

Two old ladies of Elstree, passing the new construction work on the Joe Rock lot. They view silhouette of girder work with disdain. "Another film fire, my dear. How terrible, it's even burned the bricks."

* * * *

Who was the cinema circuit owner who received a cable from a colleague, cruising off Barcelona :

HAVE FOUND IDEAL SITE STOP
DEMOLITION ALREADY COMPLETED

* * * *

From our Fan Mail—received at Head Office :—

"If you should require any Chinese, Negroes or any Orientals at any time, I should be glad to get them for you. This arrangement will no doubt save you a lot of trouble." We always said, why try to find work for British cameramen ?

* * * *

From the Studios.

Overheard—"She doesn't want a cameraman—she needs a plastic surgeon."

* * * *

Overheard in the Restaurant—"These cutlets are tougher than a Union Shop-steward."

* * * *

Foreign Ace (to English Assistant)—"You can't afford to be wrong in Hollywood. One slip and you're fired."

English Assistant—"Is that why we see so many of you over here ? "

* * * *

The rushes ; a quiet sequence listened to in silence. Suddenly loud unexpected CRASH ! from screen. The unit jumps, then laughs. Voice from darkness, "Sounds like someone dropping his alibi."

* * * *

"Why didn't you drop over yesterday ? " he asked.
"We just started a picture," he replied.
"Well, how about to-day ? "
"Impossible, old chap, we're shooting all day."
"Then, how about to-morrow night ? "
"Sorry, but I'll have to attend the preview."

* * * *

Bad camera scratch appears in important sequence on rushes. Deadly silence. The assistant assistant director jumps in where angels fear. Says he, "Don't worry, gentlemen, we'll pan off that in a minute."

* * * *

Agitated director to cameraman busy niggering out awkward 5-kw. : "Quick, quick, laddie, let's turn 'em over. Don't worry about the flare."

* * * *

Seen in Wardour Street.

A three-ton lorry laden with negative short ends.
We wonder where that quickie's being made.

Lyndon-Haynes keeps his plaything.

"There is no doubt about the boom. The good effects of it are seen almost everywhere. How long it will last is another matter. Booms, like men, are born to die. In the normal course of things we may expect to see the end of this one. What then ? "

—*Daily Express* leader, Guy Fawkes' day.

* * * *

Studio Logic.

All good ideas produced inside the studio are the property of the studio and consequently of its chief representative, the production supervisor.

After all, technical processes don't really matter.
So that, in the final analysis, the film doesn't matter.
What does matter ?
The Supervisor. He is the only thing that really matters.
So why not sell him, instead of the picture ?

* * * *

By The Way.

I understand that the Ministry of Transport is considering a scheme for wiring off a large section of the West End, and closing it to traffic. This compound will be reserved for Mrs. Dietrich, the film actress, and those who want to look at her. She will be floodlit every evening from seven to eight, by kind permission of the Gas Light and Coke Company.

It is hoped that this scheme will enable the eccentric minority which is not interested in Mrs. Dietrich to go about its business or its pleasures without interference.

* * * *

A disgruntled man who was trying to cross Fleet Street about one o'clock yesterday, when the Lord Mayor's procession was in full crawl, muttered angrily, as he got wedged in the crowds, "Marlene Dietrich again, I suppose."

With acknowledgments to Beachcomber and the *Daily Express.*

* * * *

Knock, knock.

Who's there ?
Kenny.
Kenny who ?
Kenny light the set.

This Quota

A BRITISH picture being made on the floor with an Hungarian star, a French maid, a German make-up man, a German Director, an American co-star, Italian cameraman and an Austrian Producer ; and a Cockney voice from the gantry says "Grand thing, this quota."

—From *Studio Film Bulletin.*

BADGES, price 9d. each.
From A.C.T. Representatives, or
30 Piccadilly Mansions,
London, W.1

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Volume Two: Number Eight. FEBRUARY-MARCH, 1937. Price Ninepence.

Sidney Cole *asks* WHAT IS QUALITY?

A Review of the Report of the Quota Act Committee and of the second volume of evidence given before the Committee

A QUALITY test for all British pictures before registration for quota, based on a viewing of the picture by a Government Films Commission. New quota requirements (for features) of 20% rising to 50% for renters, and 15% rising to 50% for exhibitors. Separate quota for shorts—15% rising to 50% for renters, and 10% rising to 50% for exhibitors. Block booking to join its twin, blind booking, as a legal offence. A Films Commission to be appointed to implement these recommendations and to deal with other problems that may arise in the industry.

These are the main recommendations of Lord Moyne's Quota Act Committee.* Other recommendations are that

- the Government should keep a close watch on transfers of interest in film companies, and take such steps as may be possible to encourage the financing of British film production.
- all films must be trade-shown.
- exhibitors' quota should be computed on a quarterly, and renters' quota on a half-yearly, basis.
- special foreign films may be shown without British quota against them if only one copy is rented for not more than 12 weeks in a quota year.
- government should endeavour to secure reciprocal treatment in the Dominions for films made in this country.
- the requirement of a British author of the scenario should be withdrawn.
- previews before registration should be legalized, up to a maximum of 3.
- possibility of an annual census of film production should be investigated.

The Committee has, on the whole, done an intricate job very capably, ingeniously dovetailing the demands of varied interests into the structure of prospective improved legislation. A.C.T. has no quarrel with the principle that informs the Report. The recognition, for example, of the need for attention to the financial structure of the industry, and for the extension of credit under proper control, has been strengthened by the subsequent strike of some of the major banks against the direct or indirect financing of film production. The provision of quarterly and half-yearly returns, the stiffening of penalties for infringement and the illegalization of block booking, are all desirable means of shortening the overlong gap between production and release which is such a serious financial handicap to the British film. Some of the detailed suggestions, however, seem, despite the arguments of the Report, unworkable; and others need additions to make them completely satisfactory.

Other sections of the trade have already expressed their doubts of the practicability of the quality test based on a direct viewing of each film submitted for quota registration. The majority of the evidence given before the Committee favoured a test, but a test based on minimum cost. This the Committee rejected. Cost, it is true, is an arbitrary qualification, but is the qualification of taste, applied through a committee, any less so? The Report argues:—"If it is possible for problems relating to censorship of moral values of a film to be solved satisfactorily, there would seem to be nothing impracticable in arriving at a decision likely to command wide agreement on the much less controversial aspect of general quality." But have censorship values been solved to the complete satisfaction of everyone? There are many persons, from all sides of the trade, who, privately at any rate, would disagree.

And I deny resolutely that general quality is a "much less controversial aspect." The drafting of a scale of moral values, to be applied to a mass of films made by and for people of widely differing outlooks and beliefs, is, philosophically, impossible; but practically it can be and has been done, by approximation. In questions of taste it is not only philosophically but *practically* impossible. What is the quality that is to be assessed? The Report says it is "the entertainment value and general merits." Are the "chairman and not less than two, or more than four, other members, all being entirely independent of any professional or pecuniary interests in any branch of the trade" going, with all due respect to their integrity and good sense, to be the best judges of entertainment value?

Does "general merits" mean technical quality? If so, there is the same query, with the addition that, as A.C.T. pointed out in their evidence before the Committee, an expensive film may lack entertainment qualities but be

* Report of a Committee appointed by the Board of Trade. H.M. Stationery Office. 9d.

technically good—and a cheap picture may sometimes book to hundreds of halls though having little or no technical merit. Although the more expensive picture, within limits, is better than the cheap picture because it gives scope for technical excellence, which the latter does not. As the American industry has so abundantly proved, the entertainment, and so the financial, success of a film industry depends, over a period of time, on the maintenance and improvement of technical quality. The more expensive picture, on average, has the better box-office chance, simply because it gives technical scope. Cheap and badly made pictures may occasionally score box-office success, but the firms that consistently spend money for technical quality produce the world-beaters.

This quality test has further hazards. I gather that the estimate of quality is to be a fluid one, based at any one time on the standards of the pictures viewed in the preceding period. Does this mean, as it seems to, that after a quarter of bad films, the standards for the next quarter will be lowered? In such conditions worse and worse films might be allowed quota. Or is there really to be a fixed standard? since the report talks about a "minimum" standard laid down by those responsible for viewing the films. And if so, what could it possibly be?

Whatever it is, to help determine it the administrative authority "should also have power to require a viewing of any or all imported foreign films at any time." The Commission is going to see a lot of films. And British distributors are going to feel very happy about having to show all their pictures to two committees before they can trade-show them.

Legislators always try, and rightly, to avoid wordings susceptible of manifold and controversial interpretation. If law is to be effective it must, as far as possible, define clear-cut categories, precise and unblurred. *A cost test is such a category.* Arbitrary, it is true, but administratively easy, and in an impregnable position against dispute. A picture should cost at least £2 a foot to qualify for quota—it doesn't, therefore it doesn't qualify. But a picture should have a certain level of "quality"—the Films Commission says it doesn't, the renter objects, the Commission reiterates, the renter persists, fresh screenings, the Commission gives way—which is bad for its prestige; or it insists—which gives a recruit to a campaign against the Act and leads to a cynical search for cunning arguments and to behind-the-scenes manoeuvres to by-pass legal requirements.

I share the resentment of the Committee at the attitude expressed in evidence* by the K.R.S. They declared the present obligation upon distributors of foreign films to produce 15 to 18 British films a year to be "an obligation so heavy as to be practically impossible of effective performance." They proposed that in future the number of films they are obliged to make should be reduced to 5 or 6. Under conditions, of course, "as to cost and otherwise that will ensure their being effective and creditable British pictures." In return for this consideration, they would be happy to give assurance that they would comply with the legislation so amended. This caused the following exchange:—

Sir Arnold Wilson (for the Committee).

"It is rather a pity that you should put in your evidence that if the obligation is reduced you will try to comply with the law."

* Minutes of Evidence taken before the Committee, fifth to eighth days. H.M. Stationery Office. 7/6.

Mr. John Maxwell (for the K.R.S.):

"That was not the intention . . . . the American renters were willing to give any assurances in their power of their bona-fides, and they were really serious in trying to deliver worth-while pictures if the Act were altered to enable them to do it."

Sir Arnold Wilson:

"If the Act is not modified, you will sit back?"

Mr. John Maxwell:

"Personally I will not blame them if they do, to be frank with you."

That, from one aspect, is an impudent declaration of prospective law-evasion. But, from another, it should have been weighed more carefully. I think, despite that declaration, that the American renters, faced with a very considerable quota increase over the next 10 years, *must* begin to produce the worth-while pictures that they rather naively declared in their evidence they have always been willing to produce. They must, for purely financial reasons. They dare not each make, or sponsor the making of, thirty or more British pictures which will be deliberately non-productive. It would involve too much money, however cheap the cost per picture, for it to be regarded merely as a tax on imported Hollywood output. But if to increased percentage the law adds a provision that means each production season for the next ten years will start in an atmosphere of uncertainty, of worried estimates as to what will be the personal reactions to their pictures (*however expensive*) of four or five gentlemen "independent of any professional or pecuniary interest in any branch of the trade"—then I say, and am certain, that the threat of the K.R.S. will not be an empty one, impudent or not. Means will be sought, and found, to achieve that obedience to the letter and neglect of the spirit which the new legislation aimed to remove.

No! Let us have a straightforward cost-test of £2 per foot minimum, such cost, as A.C.T. suggested, to exclude certain items that might be susceptible of manipulation in order to defeat the law. And let us have the Commission as a court of appeal only, to which can be submitted films which do not reach the cost-level but which their sponsors claim to be of sufficient quality to atone for that lapse. The claimants would have to list concrete reasons, and there might be a requirement that they back their claim with the less prejudiced opinions of outside persons to whom the film has been shown. *The Report does not consider this possibility.* Instead, it considers the possibility of films already registered on a cost qualification being appealed *against* on grounds of bad quality. This would be ridiculous. The administrative body would find itself with twice the work and half the authority. But an appeal for those pictures which have been rejected is a practical, simple and normal procedure. I urge the Board of Trade to consider this particular recommendation very seriously before drafting it into the new Bill.

———

A.C.T. agreed before the Committee that the requirement of the author of the scenario to be British might be withdrawn, since the clause had in practice been a dead-letter, owing to difficulty of definition. But I am sorry to see no reference to A.C.T.'s further suggestion that there should be instead a requirement that not more than one foreign technician be employed on any picture qualifying for quota. Foreign technicians who come here have not

had to work on the despised "quota" picture. If the new Act is to lead to a millenium in which quota pictures are good pictures, why not ensure that it is still the British technicians who make them ?

I have referred already to the view of the K.R.S. that the renters' quota obligation should be reduced, with the implied result of a few expensive and worth-while British pictures each year. They feel that an increase in the *number* of British pictures made would, from any point of view, be calamitous, although they agree that "the poor quality of many of the pictures acquired for quota, in order to comply with the letter of the Act, has done a great deal of harm to the standing and prestige of British pictures." They view with consternation the prospect of fifty or sixty good quality quota pictures being produced in this country, because "the result on the fortunes of the native British producers would be serious, owing to the greatly increased quantity of pictures they would find competing with them in the British market."

The Report suggests that the Quota Committee were not impressed with these arguments. It was urged that some American firms tried hard to make good films but lost so much money without getting results that they gave up the struggle in the early Quota years. But they are now prepared, they say, to spend the same amount of money on a third as many pictures. Now to do this requires the creation of an efficient production organisation, which, according to their guarantee, they would be prepared to do. But if they are prepared to do so now, why did they not do so before ? And if, as they say, conditions made it impossible in the past to create such an organisation, how is it that conditions have improved so much over a period in which quota obligations, on their own showing, were crippling them ?

If conditions have improved, it is surely partly due to the increased skill of British technicians, gained despite having for the most part to work on cheap and bad Quota pictures. Technicians will consequently resent Mr. Maxwell's ungenerous remarks before the Committee on the salaries paid to them. Mr. Maxwell said that the development of the industry "is handicapped by extortionate wages throughout the whole of the industry. I used to pay a cameraman £12 per week, and now I cannot get one under £40—£50 a week. Some of them get £100 a week." I wonder how many British cameramen at Elstree find £40—£50 in their envelope each week ?

Mr. Maxwell is probably the shrewdest of our film producers, as the following figures of his Associated British Picture Corporation testify :—

Year.	*Dividend.*
1934	6%
1935	10%
1936	12½%

I think he is shrewd enough to realise that dissatisfied technicians don't make the best units. To regret also the implications of this passage from his evidence before the Committee :—

Mr. Maxwell : *"I do not mean sound recordists, cameramen and other mechanical workers."*
Mr. Cameron : *"No, I mean the brains."*
Mr. Maxwell : *"Creative brains."*

because he surely cannot mean that sound, photography, editing, art-direction, and make-up create nothing in a film ?

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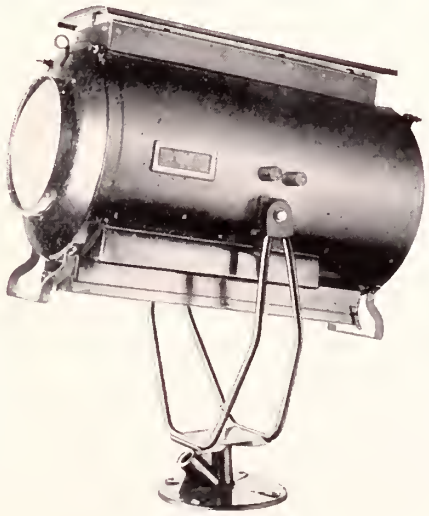

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Collingburn *says* "O.K. for Stills?"

IF the above title could be written without the query, the title alone would suffice, and further comment on the subject would be quite unnecessary and superfluous but, unfortunately, it seems that not only is a single query essential, but inadequate, as I see more than one question to be answered before everyone concerned is satisfied that the money spent on stills is well spent, and equally well earned.

The ensuing observations will not be in the nature of any personal complaints with regard to treatment or conditions, as I have my own methods of overcoming them both; nor do I criticise the quality of stills made in England. Such criticism is for those who buy them and is completely outside the scope of this article. Much rather would I endeavour to analyse the general situation as I have heard it from producers, directors, cameramen, and lastly from the men who really work for their living, the STILL-MEN.

To the still-men themselves, I say this. Providing you know your job thoroughly, your success or failure depends chiefly on your own personality and your ability to get others to help you. Don't forget that you are an isolated unit. Apart from making essential continuity stills, you do not enter into the production at all, that is, from the point of view of all the others who have their own particular job of work to do. I am not applauding this system of working, because I think it is wrong. But that is not your fault, neither is it the fault of those working on the floor. The producer is the man who employs his staff, from director downwards, and it is up to him to see that all of them have adequate facilities for performing their jobs. If those facilities are not available, the proper person should be notified immediately, and things put right without delay. You have only yourself to blame if you try to make do with unsatisfactory conditions to the detriment of your work. It is not fair to your employer or yourself. It is useless to make excuses at the end of a film; make your complaints (if any) in writing, at the time. If nothing is done to ease an impossible situation, sit back and draw your money. It will not be your fault if you are not earning it.

Still] Collingburn

Still] Collingburn

Production at Metropolitan Studios.

Now the producer's side of the question.

One producer confided to me that he had completed a picture, to find at the end that he had no stills. Yes, he had employed a still-man, one recommended to him by someone else on the unit. No stills at all seemed incredible to me. However, on going into details, I discovered that the still-man was second assistant on the cine-camera as well, and did his best to make a few stills in between. He had taken a few dozen exposures with a ½-plate camera, using "Ordinary" glass plates (not even panchromatic), and out of these there were but four that were even barely printable. The remainder were multiple exposures, blanks, and blacks. This is probably an isolated case, but nevertheless, it serves to emphasize the necessity for a producer to ascertain the qualifications of his staff. It is difficult to extend a great deal of sympathy to one who is so uninterested in his stills, before and during production. But he alone realised the value of what was missing on completion of the film.

To producers may I be permitted to offer suggestions whereby money will be saved by making due allowance for the importance of stills? In the first place, do you allocate any percentage of your scheduled time for making your film to stills? Or do you just employ a man and turn him loose on the floor to get the best he can, and in any way he can? That seems to be the general system, but do you

PORTRAIT STILLS BY COLLINGBURN.

PAUL ROBESON (Fortune Films production)
CHARLES FARRELL (Dela Films)
BEBE DANIELS (Dela Films)
ELIZABETH WELCH (Fortune Films production)

as a producer think that this is the best method ? If stills are worth making at all, they are worth making well. A little thought from you makes them worth so much more the money they cost you. Get the best man you can afford, and the cheaper the production the better the still-man is a good motto, and a good investment. At least, he will not advertise the fact that you are making a film on the most economical lines.

If you are renting studio space, you are also paying for stills facilities, and it is only fair to you and your still-man that there should be adequate lamps available for portraits ; and dry and properly equipped dark rooms for the exclusive use of your stills staff. I have had to share with the resident still-man on more than one occasion because this point has been overlooked. This is often to the disadvantage of the producer, and frequently calls for more than a little tact on the part of the tenant's still-man to make stills at all.

The producer pays for all delays and failures in this direction, and the still-man is in no position to take the matter up with the studio executives. It must be done by the producer's company before the production starts. It is often a good plan to send your man to survey the conditions and report difficulties, if any.

All this may seem an awful lot of trouble at the start, but it would save a much greater amount of trouble, during and after production, and would go a long way to eliminating two expressions I have heard, "What a lousy lot of stills," and "I hope I don't make stills for that unit again." I am now going to take it for granted that all producers, having read my illuminating remarks on the subject, will forthwith hasten to arrange that all still-men in future will have a special chair on the floor from which to direct operations, and to invest them with sufficient authority to tell the director and camera staff that a satisfactory still has been secured, and that they may now proceed with the lesser duties of making the film.

And now on the "Floor." Mr. Director, you are the gentleman whose time is measured with a stop-watch. You have a schedule to keep to, and no mention of the still-man is made on your schedule. Nevertheless, you know, or at least hope, that he is hanging around for some purpose. He stands and watches patiently. He hears the actors fluff their lines, or miss their cues. He notes that the camera jammed in the last take, and ran out of film in the take before. The mike detected a sound which no one else noticed, or "Sound" was reloading. All these things he notes, and he thinks : "What a lot of stills I could have taken if everything was as foolproof as my little outfit."

Not your fault, Mr. Director. You can be forgiven for your look of pained indulgence when you permit the still-man to take the floor for a brief minute or so. Even that is taking time off your schedule, and you cannot afford it. If, on the other hand, the still-man had a credit of *x* minutes per day, authorised by head office, and allowed for on your schedule, the situation would be a little less haphazard. Although my long experience has taught me when and when not to attempt a still, I feel it is left a little too much to the judgment of the operator, and it becomes particularly difficult when a film is running behind schedule. However, on the whole, I have found directors very helpful, and appreciative of this particular difficulty, although I maintain it should not exist at all.

Next, for you, Chief Cameraman. You are usually the most sympathetic person for stills to deal with. At least you appreciate the photographic problems of lighting and laboratory work. But be you the best from a cine point of view, it does not necessarily follow that your set-up is ideal for the still-man. Firstly, you light for action and movement of artistes from one place to another ; but you could not guarantee that any individual frame after the action has started would be perfectly composed and lit, yet the general effect on the whole will be satisfactory. Therefore, the still-man needs to move a light or two to get the same effect static that you get in movement.

Then again, you use a much faster stock, and a lens with much greater depth than the still camera uses. So adjustments must be made when circumstances warrant. And that can only happen when you have finished a sequence. The worst experience of that I ever had was some years ago, when working with a foreign "Ace" (! ! !) Cameraman, when I had to re-light every sequence almost entirely to make any still at all. I claim no medals ; the "Ace" was fired before the film was finished, and another cameraman brought in, but not before the "Ace" and myself had had a few words about moving lamps for stills. My experience of camera men on the whole is that the more they know of their jobs the less they interfere with others in allied branches.

To conclude. I must mention the non-technical departments who co-operate with the still-men. I refer to the electricians, carpenters, painters, and property men, the originators of all the practical jokes on still-men, and of the remarks concerning their doubtful ancestry, which I believe are resented in some quarters. About them I say that their valuable assistance, usually carried out in a cheerful spirit, has gone a long way to help me say

"O.K. FOR STILLS."

Important *Journal* Developments

THIS number sees the completion of Volume 2. There are two important developments commencing with our next volume.

1. Publication will be every other month, that is 6 issues per annum, instead of quarterly as heretofore. The first number of Volume 3 will therefore be published on April 1st. The size and price (9d or 6d to A.C.T. members) will remain unchanged, and the adjusted subscription rates in accordance with more frequent publication are 5/6 per annum, post free, or 4/- per annum, post free, to A.C.T. members. *May we take this opportunity to remind all readers that the best way to ensure regular delivery is by placing an annual subscription.*

2. *Technical Abstracts,* until now published separately and issued free to members, will in future (commencing with this present issue) be incorporated in the *Journal.*

* * * * *

Index for Volume Two

VOLUME TWO is completed with publication of this number. An Index will be available by about the middle of February. A copy may be obtained upon application to the Journal offices, or will be included in volumes bound by the printers of the *Journal,* details of which are advertised elsewhere.

Rating American Cameramen

THE anniversary number of "Variety" has again continued its practice of rating American cameramen. The following is their list for 1936 :—

First Ten :

George Folsey	Josephine Valentine
Victor Milner	Peverell Marley
Gregg Toland	Tony Gaudio
Esnest Haller	Leon Shamroy
Ernest Palmer	Arthur Miller

Second Ten :

Sol Polito	Arthur Edeson
Joseph August	Sid Wagner
Merritt Gerstad	Karl Struss
Theodore Tetzlaff	Ray June
Rudolph Mate	George Barnes

Top Specialists :

Process and trick work :	Vern Walker
	Byron Haskins
	Dev. Jennings
	Farciot Edouart
Aerial Photography :	Elmer Dyer
	Charles Marshall
Exteriors :	Clyde de Vinna
	Archie Stout

* * * *

A.C.T. Winter Programme

THE usual programme of lectures and film shows is being held during the Winter.

The following fixtures have been held :—

Thursday, Oct. 15th—"Voyage au Congo" (an early French travel film).

Thursday, Nov. 5th—"Some Recent Developments in Sound Recording Equipment" (by Mr. W. H. Clarke of R.C.A. Photophone Ltd.).

Thursday, Nov. 19th—"Sous les Toits de Paris" (by courtesy of Wardour Films Ltd.).

Thursday, Dec. 17th—Film Show of Advertising Films.

Thursday, Jan. 21st—"Blackmail" (by courtesy of Wardour Films Ltd.).

Thursday, Feb. 4th—"Cinema Production in the U.S.S.R." (by Mr. H. P. G. Marshall).

The following are future arrangements :—

Thursday, Feb. 18th—Film Show.

Thursday, March 4th—Lecture by Capt. H. J. Round, M.I.E.E., Director, Technical and Research Processes, Ltd.

Thursday, March 18th—Film Programme of Documentary and other Shorts.

Thursday, April 1st—Lecture by Mr. Alfred Hitchcock.

All the fixtures will commence at 9 p.m., and will be held at the Crown Theatre, 86 Wardour Street, W.1, by kind invitation of Mr. Victor M. Gover.

Admission is by production of a fully paid-up Membership Card.

* * * *

Back Numbers

THERE are a few back numbers of the *Journal* available, which may be obtained at 9d each, or 6d to A.C.T. members (11d and 8d post free, respectively). One or two bound copies of Volume One are available at 7/6.

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Wise—or Otherwise?

SAYINGS FOR 1937

Mr. Robert T. Kane, *Producer, New World Pictures*, says in the New Year issue of *The Cinema* :—

"The opening of the Denham and Pinewood studios was the best thing that happened in the Industry last year. For the first time England has studios built on Hollywood lines, where it is possible for producers to think in terms of large scale production. . . . . The important aim for the coming year is to build up personnel to man these studios. . . . . We need an infiltration of talent. . . . . Then the necessary tuition must be in the hands of experts, which, briefly, means people already working in the States."

"Therefore, I suggest that for the next few years the Ministry of Labour and the Board of Trade should make it easier for American personnel to work in British studios. This means less stringent regulation of labour permits and a wider basis for the British Quota. Only in this way can the right type of man-power be trained and established over here."

* * * *

Mr. P. L. Mannock, *Film Critic*, in the *Kinematograph Weekly*, says :—

"There is an army of skilled technicians in this country only waiting for better organisation to co-ordinate their talents. Never was there such a time for all that is best in national expression through the screen.

"One of the most hopeful signs in our studios is the preponderance of keen, serious youth among the personnel."

* * * *

Mr. Theo. Lageard, *Publicity and Advertising Manager, Toeplitz Productions, and British National Films*, says in *The Cinema* :—

"When we talk about "British films" we mean films which are financed and produced in this country. By the British Film Industry we mean an industry which, like any other, employs thousands of British workers and plays some part in the national economy. Does it necessarily mean, hoewever, that even those specialized jobs, which call for a high degree of skill, talent, and a wide technical knowledge, must be filled only by men whose birth certificates are lodged at Somerset House? . . . . The British film industry is too young for us to possess, as yet, a sufficient number of trained and experienced men who have had the opportunity to develop their abilities to the fullest extent."

"America, in the early days, did not scorn the services of men of talent who were not her own citizens. . . . . Let us take a few of the great names of Hollywood—Lubitsch, by birth a German; Capra, Italian; Sternberg, German; Mamoulian, Russian. One of the leading trade papers of New York recently made a reference to the four best camera men in the world; only one was American, Lee Garmes, the others being Franz Planer and Kurt Courant, both Germans, and James Wong Howe, a Japanese."

"To-day we have need of the assistance of such men as these in this country, just as America needed them some twenty to twenty-five years ago when she was laying the foundation-stones of her now prosperous industry. This need is, I think, appreciated by most people connected with film production. Realising that we still have much to learn and that we can profit from the technical knowledge and experience of talented foreigners, the resistance does not come from within the industry itself. A well intentioned but short-sighted Government has adopted a vigorous "exclusionist" policy, regarding most foreigners as undesirable aliens, seeking to snatch the bread out of the mouths of honest British workmen."

(Editorial Notes.—Is Mr. Lageard aware that all four of the cameramen he mentions have been working in this country for some considerable time, without opposition either from within or without the Industry? By the way, Franz Planer is an Austrian, Wong Howe is a Chinese, and Curt Courant, of course, was born in Alsace-Lorraine).

* * * *

Mr. John Grierson, *Film Officer, G.P.O. Film Unit*, in *The Cinema*, says :—

"We shall remember 1936 as the year when, on the heels of Korda and his "Henry VIII," the Assyrians came down and made the most of things. We shall remember that four millions of solid sterling were invested one way or another in British production, and that few films were good."

"I found the year exciting, if shameful, to watch. Adventurers with small reputations as artists or showmen found easy money in the city. Super theatres were spawned all over the country to house the English supers that never arrived."

"Palatial studios accommodated a wild conglomeration of foreigners, whose chief title to make British films was that their slim knowledge of English could more easily be mistaken for genius."

. . . . "But the tragedy in this case is not the loss in gold but the squandering of a whole year of national opportunity. When we were abolishing free trade in vegetables we were handing the articulation of our cinema almost exclusively to aliens who, even when they were good, were surrounding themselves with other aliens and suppressing the national idea."

"We were supposed to be learning, and if a flock of white hopes had come out of the chaos it would not have been so bad."

. . . . "What will the future be? In sheer revulsion there will be something like a rush for British subjects in 1937, and some attempt at a British style. We shall have an end of the nonsense that films have to be "international" if they are to command a world market, for the good reasons that (*a*) we don't look like commanding a world market anyway, and (*b*) if a film is deeply native it has more chance of travelling than a bastard affair that is neither fish nor fowl nor good red herring."

"Films of 1937 will, as everyone knows, be cheaper. The imitation big shots will be found out and will be marked back to sane levels of expenditure. Why be fake American for a hundred thousand pounds when you can be yourself for forty—and balance your budget into the bargain? Or putting it differently, why make bad films at a £100,000 when you can make equally bad ones for half the price?" "That, as John Maxwell would say, is economics."

Royal Photographic Society's Annual Kinematograph Exhibition

As promised in the last issue of the *Journal*, we are giving a brief write-up of the above annual Exhibition. The Association provided one evening's lectures for the Society—one dealing with the sub-standard side of cinematography, and the second with the professional side. Judging by the attendances on that evening and the reception accorded the lecturers, I think that the Association is to be congratulated on its support. It is only by links such as these that everyone can get the best out of ciné-work, both amateur and professional. Norman McLaren (G.P.O. Film Unit) showed two films made on sub-standard apparatus, in which the possibilities of this gauge of film were exploited to the full. It should be realised that in his films, the whole of the trickwork was camera-work, and that he had no access to the professional aid in the optical printer. Bryan Langley's paper on "Studio Lighting for Kinematography," was an excellent example of a good straightforward lecture on practical lines. It is understood that this paper is to be printed in a forthcoming issue of the R.P.S. publication—*The Photographic Journal*.

The exhibits were not as numerous this year, although the new pieces of apparatus shown excited a good deal of interest. Vinten's new light gyroscopic tripod is an excellent idea for light hand cameras such as the Newman, Eyemo, DeVry, etc., which have not been previously catered for in this way.

The films entered in the sub-standard film Competition held in conjunction with this exhibition were more numerous than in previous years, and the standard of photography, etc., was much higher than before. Basil Wright saw a selection on one of the Saturday afternoon projection meetings, and afterwards gave a very well-considered criticism of them to an appreciative audience. It is also understood that next year the standard film competition will be transferred from the Annual Photographic Exhibition to the Annual Kiné Exhibition proper. This should make the competition even more comprehensive than it is at present and attract a wider entry. From a general survey of the exhibition as a whole, it is becoming increasingly obvious that the R.P.S. is going to take its right place in the field of cinematography in its widest sense.

S. W. B.

Organiser Appointed

The growth of A.C.T. has necessitated the splitting of the secretarial and organisational duties, until recently undertaken by Mr. G. H. Elvin. The General Council has appointed Mr. Reg. Bartlett as Organiser, while Mr. Elvin will retain the post of secretary.

Mr. Bartlett is a member of A.C.T. and has just finished employment with Publicity Picture Productions, Ltd. Previously he has been with British Raycol and other companies. He has had considerable organising experience, particularly in connection with the National Union of Sign, Glass and Ticket Writers, the organisation representative of his trade before entering the film industry, and upon whose Executive Committee he sat.

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Cinema Log

KENNETH GORDON

Artist Advocates British Colour Film

Matania, the famous artist, who first became my friend at the Delhi Durbar in 1912 when he sat under my camera and drew hundreds of detailed sketches which formed the foundation of his pictures of that great event, has joined in the colour controversy caused by the Hollywood showing of the first British Technicolor film "Wings of the Morning," which proves how superior the English climate is for the making of colour sequences.

In an interview, Mr. Matania says: "The change from black and white to colour will, in my opinion, be almost as the passage from silent films to talkies. It will simplify the technique of the effect a great deal. This film, which will open at the Radio City Music Hall, New York, the largest cinema in the world, will, I am sure, enhance British cinema prestige."

* * * *

West's Our Navy

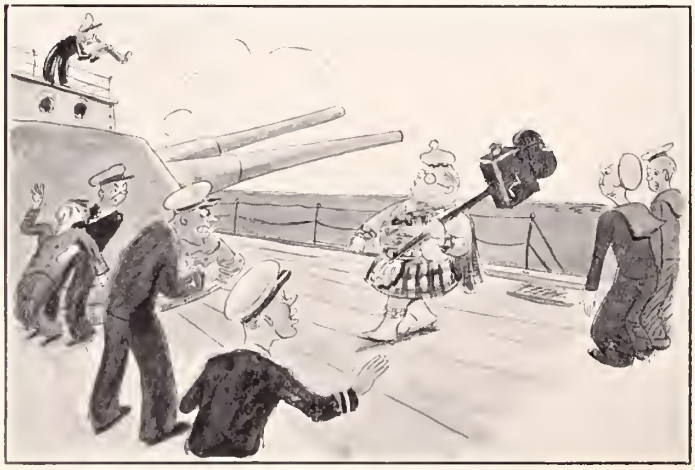
One of the greatest pioneers in the popularising of the cinema, Alfred J. West of Southsea, whose films of the Navy were shown before Queen Victoria and had many years run at the Regent Street Polytechnic and also as a provincial road-show, has, we regret to say, died at the age of 79. His pictures were many thousands of feet in length and were, in my opinion, the first lengthy programme of films to be shown. The quality of the pictures, which were photographed by himself, were very good and compared quite favourably with modern pictures.

* * * *

New Studio Cameras Under Test

Two of the cameras under test were the new silent Bell-Howell and Mitchell. The Mitchell is expected in this country shortly, and in our next issue we hope to give the latest details of its modifications.

The Research Council Silent Camera Committee met recently at the Metro-Goldwyn-Mayer Studios to conduct a comprehensive noise analysis of several new type cameras. The Western Electric Noise Analyser was exclusively used. These tests will give the various studio camera departments a complete analysis of the frequency as well as the relative loudness of the noise emanating from the cameras.



ANOTHER INVER-GORDON?!!!

"The Admiralty has issued an order that in future all movie-cameramen shall be properly attired."—*News item.*

Words of Wisdom

Jimmy Wong Howe (in an interview with "Close-Up" of *The Tribune*: "It is a pity that colour is concentrated in the hands of chemists and business-men."

* * * *

O.K. for Sound

I hear from America that Lily Pons has a vocal stand-in who has a voice of similiar pitch and volume. The stand-in saves the famous Pons voice from the wear and tear of sound rehearsals.

* * * *

Black Ice

Real ice photographs dark, so for skating scenes in the Fox picture "Once in a Million," star Sonja Henie tried skating on frozen skimmed milk. This did not work satisfactorily, so a solution of calcium was used.

For most ice scenes a solution of hypo is used which, when poured out, crystallizes in a hard ice-like surface, well "fixed."

* * * *

Leevers-Rich Sound Equipment

On reading the specifications of the Leevers-Rich Sound Unit, one is immediately struck by the numerous uses to which this self-contained mobile unit can be put, since it includes a sound-on-film camera, a mute camera, a portable boom, disc recorder and play-back, and a public address system, one interesting application being a play-back from wax on location with a mute camera driven in sync. The outfit is normally battery driven, but provision is made for running off 3-phase 50 cycle mains, and it includes cyrstal microphones, which, of course, are of considerable value on account of their unaffectedness by wind in the open. The more technical specifications appear to be very adequate, and interested readers may obtain further details from Messrs. Leevers-Rich & Co., 47/48 Berners Street, W.1.

* * * *

Spread of Trade Unionism

It has been confirmed, after due investigation, that Moscow Gold is not responsible for the combination of the Laboratory Proprietors forming an organisation. Although at the moment they are an "illegal" assembly, being unregistered, and the F.B.I.'s constitution not allowing it to deal with labour matters, its strict constitutional feelings will, I am sure, compel it to comply with the British law and register like any other trade union.

* * * *

Fleet Street Photo Lads Act in Film

The British Press Photographers' Association was asked by Basil Dean for a number of Press men to act their own jobs in "The Show Goes On" at Ealing, so the photographers who were out of a job were sent along to Ealing at the usual fee for a commission job of £3 3/-. A Press Photographer who has been on the road for a number of years, handles his camera and obtains his position to photograph in such a way that a cameo has been obtained for this picture—of course on the floor they just did their natural job.

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Colorfilming in a British Studio

By RAY RENNAHAN

The following article is reprinted from the "International Photographer" (December, 1936). It is felt that such an article is of interest to readers, being the opinions of a famous American cameraman who worked on a production in England.—Editor.

THE British studios are so widely scattered among London's sprawled-out suburbs that if you're on a picture in one studio, you have very little opportunity to get around to explore the others. So my remarks must be based on what I actually experienced while photographing Robert Kane's Technicolor production, "Wings of the Morning," which Harold Schuster directed at Alexander Korda's remarkable new plant at Denham. But the American cameramen who have made pictures at the other studios in England agree with me that the outstanding feature of transatlantic picture-making is the genuine friendliness with which the British welcome reputable American technicians. Everyone—from the highest executive down to the gate-man—goes out of his way to co-operate with us, and to show his appreciation of our being there. It is the same in every studio.

British film-production actually dates back to pre-war days, but the modern British film industry is relatively young. Being young, it has all the advantages and disadvantages of youth. Perhaps it has much to learn that experience has made second nature to us; undoubtedly it makes mistakes, even as we do in Hollywood; sometimes it evidences growing-pains. But it has a vigorous, young spirit that is a grand tonic; a determination to learn and to succeed. It is the same youthful enthusiasm we old-timers remember from the days when Hollywood was growing from a sleepy village to the world's film metropolis.

In England, however, there is one tremendous difference: this youthful vigour has the latest and most modern tools to work with. The newer British studios are quite on a par with any in Hollywood; in some cases, their equipment is even newer. England's greatest lack is in experience and trained technicians; but time will supply both, while American help is undoubtedly speeding the process.

A convenience which would be of real value here is the fact that near each stage is a separate lounging room for the extras. When you have a big crowd on your set, it is very helpful to be able to send those not immediately needed in the scene to this lounging-room, where they can smoke and gossip to their hearts' content, and yet be instantly available when needed.

On those six big stages, you will find an amazing number of familiar faces. Quite aside from the many actors, directors and writers from Hollywood working at Denham while I was there, I found Johnny Boyle, Al Gilks, Jimmy Howe, Phil Tannura, Lee Garmes and Roy Clark working on adjoining stages. Bill Hornbeck, formerly Sennett's Chief Cutter, is the mainstay of Denham's technical staff. Ned Mann has charge of miniatures. And there are many more Americans in the other studios. Incidentally, the only first cameraman at Denham who was not an American was Georges Perinal, the Frenchman who filmed "Henry VIII." and "Things to Come."

This does not mean that there are no good English cameramen. There are, though not enough as yet to meet the needs of Britain's suddenly expanded production. But as England has had to revamp its producing industry so suddenly, the native cameramen have temporarily had to take a back seat to the Americans, just as we once gave precedence to cameramen from Paris, Rome and Berlin when those cities were leaders in production. And just as our native-born cameramen eventually proved themselves artists equal to the best of any other country, so, too, we will unquestionably find the British re-establishing themselves in their own studios, working side by side with the world's best.

On the set itself you will immediately see more familiar "faces"—this time inanimate ones. The equipment used in modern British studios is predominantly American. Britain has developed little in this line, aside from Cooke lenses which are as popular in Hollywood as in London. And of course the Americans have asked for—and gotten—the equipment to which they are accustomed. Our picture was shot with a Technicolor camera that had seen service on most of Hollywood's colour productions; but while some of the European cinematographers favour the DeBrie, Eclair and Vinten cameras, the majority of England's films are photographed with American Mitchells, housed in Yankee blimps. The colour films are made with the four complete Technicolor outfits now in England. Most of the recording, too, is done on the latest Western Electric and RCA recorders.

Another familiar "face" is the "M-R" monogram on the lighting equipment. The Denham plant is completely equipped with the very latest types of Mole-Richardson lamps—18's, 24's, Rifles, Solarspot "Juniors" and all the rest of the family down to baby spots. As we were shooting Technicolor, our set was naturally rigged with Mole-Richardson "H.I. Arcs," Side Arcs and scoops, exactly as though we were in Hollywood. Denham has enough modern Mole-Richardson equipment to take care of all the companies their six stores accommodate at once, and arcs enough to meet any demand a Technicolor unit might make.

Many of these lamps came from Hollywood, but while I was over there a British Mole-Richardson factory was started, under the guidance of another familiar face—Robert Linderman. He began his firm's activities in England by assembling Hollywood-made parts into complete lamps; but now that the factory is organized, the lamps, with the exception of the essential "Morinc" lenses of the Solarspots and H.I. Arcs, are completely British-built. It is interesting to note the British custom of frequently giving a factory a name, rather than an easily forgotten street number. This particular plant is known as "H.I. Arc Works"—a name not easily forgotten by anyone who has used these excellent lamps.

Lighting itself is, of course, the same whether you do it in Hollywood or in London. But the British studios have one lighting problem that is unknown here. This is the matter of power-supply. Even in the studios, the cost of electricity is almost prohibitively expensive; so much so

(*Continued on page* 138)

An Open Letter to Ray Rennahan

Mr. Rennahan obtained the admiration and respect of the British technicians with whom he worked while in this country. This fact has influenced us to publish the following letter, and at the same time draw to Mr. Rennahan's notice the opportunity for reply referred to by our contributor.—Ed.

Dear Mr. Rennahan,

The "Kinematograph Weekly" refers to your article in the "International Photographer" as: "good-humoured though slightly critical on British studios."

Well now, I have always been told that I have a keen sense of humour but having read your article and then, unable to credit it possible that a man of your calibre could write such nonsense, having read it a second time, I have come to the conclusion that in the first place it is an insult to our industry and secondly, grossly misleading.

The views of the "props" when shown your "humorous" remarks about them were unprintable.

You say you had little time to see studios other than Denham because they are "so widely scattered." Every British studio of note is within *less* than half-an-hour's drive from Denham. Why not be honest and say you had no time because of the scandalous hours which the unit had to put in on your picture?

You have the effrontery to say we work "legitimate business-men's hours." What business men put in a regular *sixteen hours a day* with seven days a week more the rule than the exception? "The Wings of the Morning" unit was notorious for its utter disregard for the health and welfare of its crews. They joined night into day. The call was regularly 7.30 a.m., back to the studio when the light gave way in the late afternoon (you were shooting in mid-summer) and then lining up or shooting on one of the stages far into the night.

The company certainly provided transport to get the unit home when all regular services had closed down, but they invariably expected a 7.30 a.m. start, however near the dawn they were at the end of your "legitimate business-man's day."

On more than one occasion your unit worked over 100 hours, straight time, in seven days. Not bad going for any business man. Are you trying to tell us these are short hours compared with the Hollywood working hours?

And you forget to tell your American readers that the camera crews, the sound crews, and many others on the unit **do not get paid overtime**! If we in this country were paid on the American basis, the technicians could almost pay off the War Debt!

I challenge you to produce the continuity reports for "Wings of the Morning," and show when *any* regular working week was of 48 hours or less. Perhaps Mr. Robert T. Kane, Producer of New World Pictures, will take up this challenge! He has recently stated publicly that in his opinion the Ministry of Labour and the Board of Trade should make it easier for American personnel to work in British studios. The Board of Trade might be interested in the hours that he expects his units to work.

And you say that some of the American directors over here are trying to change our habits and work longer hours!

Again to quote you:—"the amazing thing is tea—everything stops for fifteen minutes, twice a day, while the troupe drinks tea and nibbles cookies!" Is Mr. Robert T. Kane cognisant of this?

I worked on a New World picture recently and was unable on more than one occasion to leave the stage during a twelve hour session of constant work! I had to eat sandwiches seated on the camera "dolly" in lieu of lunch!

You are critical, nay disparaging, of almost everyone on the unit. You find fault with the Production department, you insult the "props," you underrate the "sparks." You, like other American "ace" cameramen, expect the "gaffer" to light the set for you. Why, that's what they pay you a three-figure salary a week for—and I speak in pounds, not dollars!

You say "England's greatest lack is in experience and trained technicians." But are you Hollywood experts, who, as you admit, are greeted with genuine friendliness and co-operation, trying to solve that problem? The Ministry of Labour admits you into this country to work, on the understanding that you train your subordinates. Are you keeping your part of the bargain? What British technician has received promotion after working, sometimes for a year or more, under an "ace" from the U.S. or Europe? There are numbers of British technicians fully competent to take over your jobs when you return to your native countries. But they never get the "break." Another "ace" arrives, frequently with an entirely different technique, and the Britisher "goes to school again!" Technicolor has built a big plant over here, but are they going to give Britishers a chance? I have been told, frequently, of British technicians whose technical enquiries have been turned aside, and of information refused. Are you honestly trying to build up British personnel to run the British studios?

The British technician's great complaint is that there is no reciprocal arrangement for him. Millions of pounds of British money have and are being invested in the Film Industry over here, but all the important positions for technicians are being given to other than British subjects, and nothing is being done to correct this in the future. *No* British personnel is being built up for the time when you will leave our shores.

No Britisher has been sent to Hollywood to be trained in exchange for the hundreds that have come from there.

Why?

We cannot go at our own expense, because Hollywood is a "closed shop." What does the future hold for us?

Now, Mr. Rennahan, I have met you on many occasions at Denham and have had nothing but admiration for you and your work. I cannot believe that you wrote that article or saw it in "proof" before publication. I am sure you will admit that it is *NOT* a fair picture of Denham, nor is the view contained therein that of any of your American colleagues, many of whom I have worked with on the floor.

I am authorised to say that the columns of our *Journal* are open to you to reply to this, my letter, and I feel sure that you will be only too glad to avail yourself of the op-

(*Continued at foot of next page*)

Colorfilming in a British Studio—(*contd. from page* 136).

that many of the studios have their own Diesel-electric generating plants. Location power is even more of a problem, for there is so much red-tape involved in getting permission to tap one of the many high-tension lines that this is almost impossible. Portable gas-electric generator sets are virtually unknown. Mole-Richardson's British affiliate introduced a 300-amp. portable plant this summer, and it has been in such constant demand that one of the firm's newest and 1200 ampere units is now on the way to help light the English countryside.

The British climate is not particularly kind to location companies. Between the proverbial fog and frequent showers and thunderstorms, most of the studios prefer to avoid locations wherever possible. Also, few property owners permit their estates, etc., to be photographed. For the same reason, "back lots" of standing sets and semi-permanently built streets are almost unknown in England. The weather ruins such sets too quickly: the sets built only a year ago for "The Ghost Goes West" have been so attacked by the weather that they are already virtually useless. It would cost nearly as much to repair them as to build completely new sets!

British interior sets are as well built as any you could find in Hollywood. One set I noticed particularly, which was built for a big musical film, was as fine a piece of design and construction as I have ever seen.

The chief weakness in the operation of the British studios is that their minor technicians—property-men, electricians, and the like—have not had the years of production experience that have taught their fellows in Hollywood the importance of detail. For instance, you may establish a certain prop in a sequence, and then move out of the set for a day or so. When you come back to finish the sequence, your propertyman may have completely forgotten that essential prop. If you're lucky, it will be merely mislaid; more often it is gone for good! "Grips" are virtually unknown in England, the property-man does most of the work done in America by our grip department. And the props are very independent; if your property-man doesn't feel well, he is quite likely not to come to work, and even more likely to forget to say anything about it to the studio! After all, property-men are scarce, and he is sure of a job at any other studio, so why should he worry? I can't blame the fellows, for by American standards they are badly underpaid, and I suppose that independence is about their only compensation for it.

Incidentally, the cameraman in a British studio has far heavier responsibilities than he has in Hollywood. Here, we work with a perfected organization; in England, we work virtually without it. Accordingly, the director and the cameraman work doubly hard; many decisions which at home would either automatically be taken care of by the production department, or be handled by the assistant director, fall upon the cameraman every day.

Here, we work with an electrical crew who know lighting and who can be of great help to the cameraman in preparing a set for his style of lighting. In England, the electricians are eager and willing, but they have not had the experience which teaches them the importance of placing lamps correctly to an inch, and focussing spotlights to a fraction of a turn. In England, you light your sets personally, rather than polishing a roughed-in lighting, as is possible here.

You can readily guess that working hours and especially night work are not what they are in Hollywood. Of course, if you have night scenes to make, your company works at night; but otherwise (though some of the American directors are trying to change the habit) British troupes keep legitimate business-men's hours. And they are definitely British business-men's hours—interrupted promptly at ten in the morning and four in the afternoon for that time-honored British institution, tea. Lunch is called with clock-like regularity, too. But the amazing thing is tea! Everyone on the set contributes to a tea fund, and at the appointed hour, everything stops for fifteen minutes while the troupe drinks tea and nibbles cookies, brought from the commissary by the property-man. Though the idea seems surprising at first, you soon learn to appreciate it, for it makes a very refreshing pause in the day's grind.

But despite these distinctly minor faults, the British studios are not only a very pleasant place in which to make pictures, but a place where you can make **good** pictures. It is amazing to see the fine new and completely equipped British studios of to-day, and to realize that only a few years ago their studios were small, badly equipped, and dedicated only to the production of cheap "quota pictures"—films even a poverty-row "quickie" producer would have been ashamed of. The really representative British pictures of to-day are such as any of our own major studios might be proud of. It is true that the quota picture still exists, but it is improving and vanishing. It is also true that no British studio has yet developed the specialized production organization one finds in Hollywood's studios, but it took Hollywood many years to build up its own organization, and not even England's tremendous enthusiasm can build up such an organization overnight. It will come; it is on its way. Meantime, the co-operation between Hollywood and London, as evidenced by the innumerable Hollywood-trained artists and technicians now making British pictures, and the founding of British branches by such firms as Mole-Richardson, Technicolor, and others, is not only helping British films, but cementing international ties that will be of lasting value to both countries.

Open Letter to Ray Rennahan (*contd. from previous page*).

portunity of clearing up the misconceptions that have arisen through the publication of your article.

I can assure you that amongst the British technicians there is a very real feeling of friendliness and desire for co-operation with reputable American and other foreign technicians, for it is only by our working together in a true spirit that we can hope to put Britain on the "film map;" and that is our earnest desire.

Believe me,

Yours very truly,

A British Technician.

P.S.—It is for divers reasons that I use a "nom-de-plume," but I shall be only too glad to meet you at the "19th Hole" when next you visit this country, and over a pint (or is it a rye-whisky?) I am sure we could clear up a lot of points to the mutual advantage of, and the strengthening of the bonds between, American and British technicians.

Unemployment Insurance and the Salary Limit

THE raising of the Unemployment Insurance Salary Limit is a question of great importance to film technicians, perticularly those whose weekly salary brings them over the insurable limits but whose annual remuneration is very much under even the present statutory figure. Such technicians are, however, deprived of benefit when unemployed. We therefore welcome the recommendations of the Unemployment Insurance Statutory Committee declaring in favour of the raising of the salary limit in respect of non-manual workers from the present limit of £250 to a new limit of £400. We are pleased to note the protests of the National Federation of Professional Workers against the delay in introducing legislation to implement the Committee's recommendations and draw attention to the following resolution passed at a Conference on December 12th, 1936, at which over 30 non-manual and professional organisations were represented :—

"This Conference of Non-Manual and Professional Workers reaffirms the series of emphatic declarations made at previous Conferences in favour of the raising of the Salary Limit in Unemployment Insurance to £500 a year, in harmony with the repeated representations that have been made to successive Governments during the last six years. It recalls the pledge given by the Minister of Labour, in February, 1934, that the matter should have full, sympathetic, and early consideration, and reminds the Government that the Unemployment Insurance Statutory Committee, in February, 1936, reported in favour of raising the Salary Limit to £400 a year.

The Conference, representing a wide range of interested Trade Unions, views with unmitigated disappointment and indignation the Government's omission to act upon the Committee's recommendation, and deplores the absence of any reference in the King's Speech of November 3.

The Conference therefore calls upon the Government for an assurance that this urgent and important matter directly affecting the interests of 450,000 citizens, shall have attention without further delay.

Conference expresses warm approval of the efforts already made by the National Federation of Professional Workers and its officers, and urges them to continue energetically to prosecute active measures to keep the question before the Government and before Parliament generally, with a view to the early introduction of the requisite legislation."

Lecture by Olaf Bloch

WE have been asked to draw readers' attention to a lecture by Olaf F. Bloch, F.I.C., Hon. F.R.P.S. (Head of Research Laboratory, Ilford, Ltd.) on "Applications of Photography to Scientific and Technical Problems." The paper will be illustrated by lantern slides and cinematograph film demonstrations, and Dr. Spencer, President of the R.P.S., will preside. The lecture is on Wednesday, 10th February, at 8.15 p.m. and will be held at the Royal Society of Arts, John Street, Adelphi, W.C.2., from whose offices tickets may be obtained.

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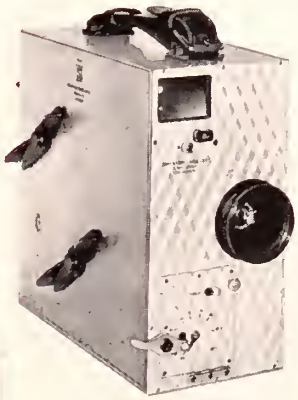

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I Looked in on Television

Donald Mackie

As my readers are aware, Television Service Programmes have now been in the course of transmission for the last three months, a period during which it may claim to have collected a public. How big it is, no one knows. For the last month or so I have been fortunate enough to see television programmes on the average twice a week, so I feel in a fairly favourable position to comment.

Camera Work

There seems to be nothing outstanding in this class of work. Sometimes I have felt that not enough attention has been paid to the persons responsible for it. The worst complaint is "out-of-focus"—although on the other hand this may be a fault of the system. Camera set-ups are very ordinary—the usual eye-level shots; nothing in the way of a low shot (at least as far as I have seen). Tracking shots are frequent, but only straight tracks. I feel a lot more thought could be devoted to the choice of camera angles.

Production Technique

This is not outstanding on the whole, although I have seen some very good work which makes me feel sure that the producers, given a fair chance, can turn out good quality work. There seems to be a permanent habit of mixing one camera shot very slowly over another (usually a close-up over a long shot). The resulting effect on the screen is a mass of puzzling objects which eventually take shape (not unlike Surrealist art). This mixing done once in a while is no doubt effective, but not every time. Maybe, like most novelties, this will pass out of fashion (if fashion is the right word).

Production quality is not very high, for the simple reason that the programme material made available by the B.B.C. for the producer is usually poor. I blame the B.B.C., as I feel certain the producers don't and couldn't pick the majority of the items used.

Set Design

This is an art as yet practically undiscovered by the B.B.C. For the most part the sets consist of flats (with seams very prominent at times), an occasional window, a pot of flowers, and perhaps a rug (frugal to say the least). On the other hand, I have seen quite recently a new idea :—"superimposed scenery" (presumably done with models for economy). Used properly, this would be effective, but unfortunately when I saw it used the effect was poor. In the first place we saw a man playing a trumpet framed in an arch of leaves, but the leaves grew both into his head and into the trumpet. In the second place, a curtain (a grand drape as a foreground piece) kept exactly the same size in the frame as the camera tracked into a close-up, putting the leading figure entirely out of perspective.

Conclusion

In conclusion, I may say that although in my opinion Television has a lot to learn and a long way to go, it will triumphantly establish itself as a secondary form of screen entertainment. I don't think that we will ever see the day when films are finished with as "the premier source" of entertainment.

Looking-In

Representatives of the *Journal* accepted an invitation to look-in at a demonstration (Baird Process) on January 25th, given on a standard 95-guinea G.E.C. Television Receiver.

The picture size of 9-in. by 7-in. is adequate to combine the present standard of definition and brightness with a size which can be viewed in comfort in a normal room, and we noted that not only was the instrument extremely simple to operate, but that once it had been correctly tuned, no further adjustments were required.

The programme consisted of a scene from a current stage production, "Whiteoaks," with Nancy Price; an interview with Mary Field, which was the most interesting item, as it combined the use of direct and film transmission; some songs sung by Billy Merson; a sea story; and the current Movietonews.

The whole show resembled a long-drawn-out version of a pictorial magazine film, but with the visual appeal of the photography of 20 years ago—soot and whitewash, in the laboratory phrase.

It was not possible to appreciate fully the design of the various cameras, lenses, etc., which Miss Field demonstrated, owing to the distortion of image which occurred at every movement of the television camera, and to the lack of clear definition in the image at all times.

We were struck by the apparent clumsiness of the television camera. The image moved none too easily, and it took far longer to compose each new set-up than it would have taken with a movie camera. No cuts were made when one camera's image gave place to that of another, but dissolves were used instead and these were usually timed far later (by several seconds) than would be permissible in even the most slovenly film.

Film Society

The remainder of the present season's programme will be selected from Jean Renoir's "La Vie est à Nous," Julien Duvivier's "The Golem," Max Ophuls' "La Tendre Ebbemie"; two Indian films, "My Beloved" and "Regeneration," and a Chinese film "Silk."

The shorter films will include some representations of tribal life from South Africa, some avant-garde films from Poland, a film of the working of the eighteenth century Royal Swedish theatre, as well as new work from Spain, France, Germany, U.S.S.R., America, Czecho-Slovakia and Great Britain.

The policy of reduced rates and subscriptions for film technicians is being continued.

Fourth Annual Conference

The Fourth Annual Conference of the Association will to be held on Sunday, May 30th, 1937, at Anderton's Hotel, Fleet Street, E.C.4., commencing at 2.30 p.m. Every fully paid-up member is entitled to attend and, particularly as the Agenda will be a very important one, it is trusted that the date will be noted *now* in order to avoid any possibility of it being overlooked.

78
Studios, Production Companies and Laboratories contacted

671
Technicians through the A.C.T. Employment Bureau during
1936

G. E. TURNER, Managing Director, Publicity Films Ltd., writes:

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—*The Journal of The Association of Cine-Technicians.*
New Year, 1937, Number.

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LOW AND THE FILM INDUSTRY.

Low's Topical Budget has recently included two references to the film industry, which we reproduce above by courtesy

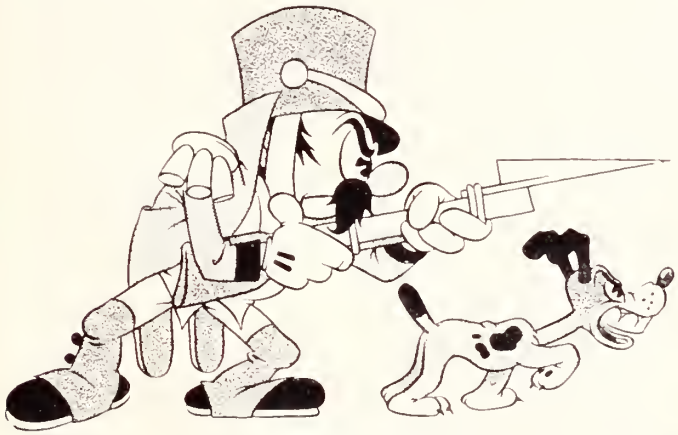
I Ask You!

Says ANSON DYER

(An Interview with LEIGH AMAN)

A MOST entertaining morning at the Anglia Films studio, where Anson Dyer is making Sam pick up his musket—(with the aid of Stanley Holloway).

Mr. Dyer has been in the cartoon business for many years. He gives an interesting summary of its development: "In the early days of film cartooning, it was sufficient for the Cartoonist's hand to appear and draw very rapidly various subjects—caricatures of politicians, well-known characters, funny animals, etc. Most of these drawings were carefully prepared before they were placed under the camera. A faint blue outline, which did not register on the film, was chiefly responsible for the marvellous accuracy and speed of the finished cartoon. The drawn lines rarely advanced more than an eighth of an inch for each frame of film, but this produced a very rapid effect on the screen. Photography was carried out on a rough wooden structure, which consisted of a top platform on which the camera was fixed, with its lens projecting through a hole in the platform, in order to shoot down on to the drawing table. A cameraman perched himself alongside the camera, and as I made my drawing he turned the camera, "one turn one picture.



'ALT! WHO GOES THERE?

"The public soon became accustomed to rapid drawing, and it was found necessary to present a new stunt—Ghost Drawing, shall we call it for want of a better expression. In this case the drawing evolved on the screen without the aid of the cartoonist's hand. An easy, though tedious, job for the cartoonist. He merely drew his eighth of an inch line and took his hand away before making the exposure. Later, this effect was augmented by showing the hand drawing one character, while another character nearby evolved without any apparent human aid. When the characters were complete, exact replicas (which had been previously prepared) were substituted during the moment that the hand, in its exit from the screen, covered the original characters. This was a lengthy operation, as the hand had to be caerfully registered, movement by movement, as it left the screen. The prepared replicas were made on the Cut-out principle—the heads, features and limbs being cut out and jointed in very elaborate fashion. These figures would become animated, and carry out whatever little plot had been arranged for them. So long as a character was shown in profile, and on one plane, it was possible to get really good movement, but to get a *smooth* walk out of it was a very difficult and tedious job. I have known it take as long as 8 to 10 hours to walk a figure from one side of the screen to the other.

STANLEY HOLLOWAY RECORDING.
Note signal light on right of picture.

"Soon after this, the Separate Drawing System came into being. By this I mean that every movement was drawn on a separate sheet of paper, with punch holes made to fit exactly on register pins on both drawing desk and camera table. I will not elaborate on this system, except to add that this was the primitive method of the system

E. ANSON DYER.

which obtains in the elaborate cartoon work of the present day." (The modern method was described by Mr. Hopkins in the previous issue of the *Journal*).

I should like to mention one or two interesting points which struck me during my visit. Mr. Dyer uses the pre-synchronising method, which means that the sound track is made first and the cartoon is fitted afterwards to the words and music. To ensure perfect synchronisation, Holloway is photographed as well as recorded and beside him, also in the picture, is a signal light which, operated by the tapping of the conductor's foot, flashes each beat.

When the pencil drawings (about 9,000 of them to an 800 foot film) are traced on to celluloid sheets, indian ink is used. Normally it would not "take" on celluloid, so sugar is dissolved in the ink—this apparently has the required effect.

For colour, the Dunning process is used. Two frames are exposed on each drawing—one through a green filter and one through a red one, thus producing a double length negative. This is finally rectified in the printing, which is done on a "skip-frame" printer.

Asked if the making of British colour cartoons is a paying proposition, Mr, Dyer says, "Here we are in both the lap of the Gods and the hands of the British renter and exhibitor. It would seem reasonable to suppose that British colour cartoons could be made with profit to the producers, but a day or so ago I was discussing the question with the Sales Manager of one of the biggest distribution and renting concerns in the country, and he assured me that even a Walt Disney cartoon did not enhance the takings of a cinema one single penny. I ASK YOU!"

* * * * * *

Variety

Mr. Elvin has again been asked to contribute to the Anniversary number of "Variety," and the 31st number contains an article by him entitled "British Technicians."

"The Green Pastures"

Statement by the Cinema Christian Council.

The following statement with reference to the film *The Green Pastures* has been issued by the Cinema Christian Council, the object of which is "to promote the practical use and development of the cinematograph in the cause of religion, education, recreation, and social and moral welfare throughout the Empire." The President of the Council is the Archibishop of Canterbury, and the Vice-Presidents are the Archbishop of York, the President of the National Free Church Council and the Moderator of the Federal Council of the Evangelical Free Churches. The Chairman of the Cinema Christian Council is the Bishop of Croydon.

"The Cinema Christian Council, in view of the protests against *The Green Pastures*, decided to give, if possible, a considered judgment on the film. It is obvious that only those who have seen the film are competent to review it. Members of the C.C.C. were, therefore, urged to see *The Green Pastures*, and a special meeting of the Council was called to consider the evidence. The reports given by those who had seen the film revealed a considerable divergence of opinion, and a long and interesting discussion ensued.

"It was agreed that while finding various points in the film open to serious criticism, it could be generally approved as a moving and reverent representation of a primitive conception of Old Testament religion. A considerable minority was against the general release of the film for showing to all audiences.

"The Council were strong and unanimous in their resolution that *The Green Pastures* is unsuitable for children and should have an 'A' certificate. The Council also agreed in recommending that the film should only be shown with a fitting supporting programme.

"It is hoped that Churches throughout the country will do what they can by their influence to ensure that these two recommendations are carried out."

Films Registered under Quota Act during 1936

The following Statement, issued by the Board of Trade, shows the total Numbers and Footage of British and Foreign Films Registered under The Cinematograph Films Act, 1927, from the 1st January to 31st December, 1936.

NATIONALITY.	LONG (*a*)		SHORT.		TOTAL.	
	No.	Footage.	No.	Footage.	No.	Footage.
British (*b*)	222 (*c*)	1,428,281	196 (*d*)	213,253	418	1,641,534
Foreign (*e*)	530	3,453,473	612	784,943	1142	4,238,416
Total	752	4,881,754	808	998,196	1560	5,879,950

(*a*) 3000 feet or upwards.
(*b*) Includes films made in British Empire Overseas.
(*c*) Includes 2 films registered for the purpose of the exhibitors' quota only.
(*d*) ,, 75 ,, ,, ,, ,, ,, ,,
(*e*) Films made in the U.S.A. form the great majority of foreign films, but the figures given include particulars of films made in other foreign countries.

MODEL 695.
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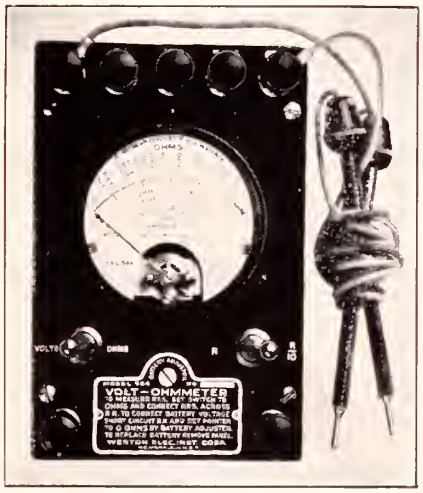
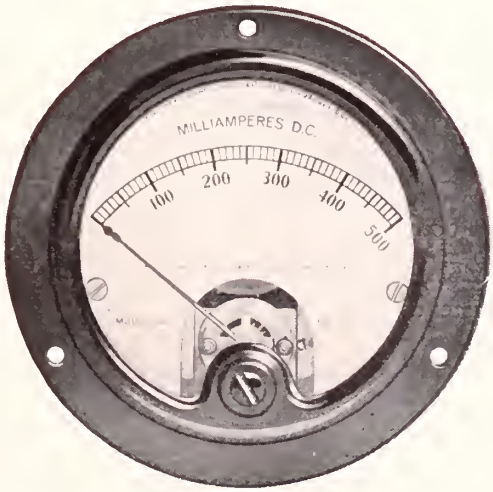


MODEL 564.
VOLT-OHMMETER.

MODEL 669.
VALVE VOLTMETER.



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A Federation of British Film Producers?

GEORGE H. ELVIN

Comments on Neville Kearney's New Year Suggestion

ON November 21st, A.C.T. presented proposals to studios, laboratories and newsreel companies as a basis of discussion for negotiation of an agreement with reference to conditions of employment and salaries of film technicians and laboratory workers. On December 10th an agreement was signed between the Association of Cine-Technicians and Gaumont-British Picture Corporation in respect of salary rates and working conditions for members of the Association employed at the Corporation's studios at Shepherds Bush. On January 1st, Neville Kearney, Secretary of the Film Group of the Federation of British Industries, published an article in the New Year issue of the "Daily Film Renter," entitled "A Federation of British Film Producers?" The chronological order appears significant. The nature of Mr. Kearney's article seems to confirm this view.

The F.B.I. is a federation of manufacturers whose Charter of Incorporation precludes it from dealing with labour matters. It is, therefore, suggested by Mr. Kearney that an organisation representative of the production side of the film industry should be formed whose function should be to deal with labour and all other matters of concern to the trade.

The following are extracts from the views put forward:

"In these days of organised labour it is essential that employers should band together for the purpose of co-operative negotiation with their employees. This does not suggest 'fighting' labour or attempting to impose unreasonable conditions. On the contrary, co-operative action on the part of employers may well result, and in fact almost invariably does result, in the adoption of better all-round conditions of employment and, by the faithful observance of reasonable agreements entered into between responsible representative bodies, a better understanding with employees, and reduction of the risk of labour disputes.

"The film industry has nothing to fear from the activities of labour organisations. It has always paid good salaries and wages to its employees and offered good working conditions. There is no doubt whatever that in a large number of cases individual workers in film studios as well as representative unions, would prefer general conditions of employment to be negotiated with a representative body of employers rather than by particular negotiations with a number of different enterprises. And this applies not only to technical workers and artisans, but to artistes as well, not excluding leading artistes.

"The point, therefore, of this article is that the time has now come when all interests connected with the production side of the industry should get together and set up, without loss of time, a really representative trade association capable of dealing with all matters, including labour questions, that are of concern to the trade. Such an organisation might well include, in different sections correlated through committees and a general council, all branches of the industry concerned with production, and not merely the makers of feature films as at present. That, however, is a matter of detailed organisation, into which it is not my present purpose to go.

"I commend the suggestion, and am convinced that such an association would be of inestimable help in still further building up our production industry on a solid and dignified basis, and that its establishment would, at the same time, effectively answer the by no means wholly unjustified criticism that the industry needs organisation."

We have no quarrel with Mr. Kearney's suggestions generally. In fact, for many reasons they are to be welcomed. It is difficult for any labour organisation to maintain uniform conditions in an industry always having frequent newcomers, and so many particularly of the one-picture variety. A general labour code to which such employers would have to subscribe should be welcome, particularly by those employers who observe fair conditions, and by all employees' organisations. Further, if such a code contained a financial clause showing available funds for salaries and wages over a prescribed period, and without which production could not be commenced (similar to that imposed in the theatrical world) we should be saved many of these unsuccessful efforts to produce films on insufficient capital which leave behind a wreck of liabilities and are responsible for much of the bad financial reputation attached to the film industry.

We hope employers will particularly note Mr. Kearney's views on the wisdom of a federation such as he suggests and the general advantages which should result alike to employers, employees, and the industry generally. But as an employees' organisation A.C.T. cannot overlook another aspect of such a federation, particularly in view of recent developments. Employers in the laboratories and newsreels have, as Mr. Kearney must be aware, combined in a loose form along the lines he suggests. They are acting collectively in replying to A.C.T.'s standard Agreement. At this juncture we do not wish to say anything which may be detrimental to future negotiations, but we feel we must point out that if employers feel that collectively they are strong enough to refuse to negotiate with an organisation representative of their employees, which has approached them in a reasonable manner, then they themselves must take responsibility for any subsequent action which their employees are forced to take.

The Agreement between the Association and Gaumont-British is the first ever negotiated between a British film company and its technicians. It is significant that one of the largest British film companies has been willing to negotiate such an agreement. Throughout, the negotiations were cordial and both parties to it are, we feel sure, confident that the stabilisation of working conditions and salaries will be to the mutual benefit of both employers and employees, and will ensure a continuance of the happy relationship which has always existed between them. Other studios have already commenced negotiation with A.C.T. We do trust, therefore, that the laboratories and newsreel companies will, particularly in the light of the above information and Mr. Kearney's article, accept the request of

A.C.T. for a joint meeting to discuss the question of an agreement, standardising working conditions and determining minimum salaries.

Almost every employee engaged in film production is now in his respective organisation, whether it be the A.C.T., the E.T.U., or the N.A.T.E. If the employers take Mr. Kearney's advice, might we suggest to our fellow trade unionists that the three employees' organisations co-operate jointly on labour matters? The first step towards the stabilisation of labour matters in the film industry will then have been taken. The rest depends upon the two parties involved. On our part, as one of the employees' organisations, A.C.T. would strive its utmost to ensure that having attained stabilisation of working conditions, salaries and wages, which we trust would achieve that efficiency and contented employment which is so necessary in the production of a finished article which will be a credit to its producers, its members will play their full part in the development of an important industry which, as it grows, should tend towards more employment and still better quality of output. This latter, after all, is the very life-blood of the British film industry, and cannot be attained without the full co-operation of the technicians who collectively are now represented in the Association of Cine-Technicians.

Vinten's Prices Raised

Owing to a general increase in the prices of raw materials and labour, W. Vinten, Ltd., announce that to their great regret they have had to make an increase in catalogue prices of approximately 15 per cent. as from January 1, 1937.

Production Buyers Organise

Nearly every production buyer in the industry attended a meeting on January 14th, presided over by Mr. E. Moynham.

Discussion showed that some form of organisation was essential both in the interests of the buyers themselves and the film industry. It was unanimously agreed both to form an organisation and to link it up with A.C.T., thus providing closer contact with the Art Department and co-operation with organised technicians generally.

A further meeting has been called, at which it will be unanimously recommended by the committee appointed at the above meeting, that all production buyers join A.C.T. and function through a Production Buyers' Section of that organisation. The section will be autonomous as is the case with the laboratory and news-reel sections.

We congratulate the buyers on this move and wish them every success in their deliberations and activities.

Library Additions

Recent additions to the A.C.T. Library (available to all members) include; "B.J. Photographic Almanac, 1937"; "Waterloo in Wardour Street," by Eric Siepmann; "25 Years of Film," by G. R. Doyle; "Portrait Photography," by Franz Feidler; "Photography," by C. E. K. Mees, and Report of a Committee Appointed by the Board of Trade to consider the position of British Films, having in mind the approaching expiry of the Quota Act.

NORMANS FILM LIBRARY FILM DESPATCH EDITING BAYS

WE UNDERSTAND THAT IN 1936

THE BRITISH FILM INDUSTRY

LOST

£1,500,000

ON FILM PRODUCTIONS

IT MIGHT EASILY HAVE BEEN £3,000,000

BUT THRIFTY COMPANIES

CAME TO US . . .

NORMANS FILM LIBRARY FILM DESPATCH EDITING BAYS

Shooting in the Shetlands

LIONEL K. TREGELLAS

Towards the end of last June a complete production unit set out from the Rock Studios for the tiny Shetland island of Foula ; set in the wide Atlantic, too small to be marked on any but the most detailed maps, hammered by pounding rollers and swept by stormy winds that blow in all directions, turned and twisted by the hills of Foula. The Kame, 1300 feet, the Snoug, 1400 feet, Soberlie, the steepest of them all, and Hamnafeld (all old Norse names) we will always remember.

The film, "The Edge of the World," is a hundred-per-cent outdoor picture, based on the evacuation of the island of St. Kilda in the Hebrides, showing the lives of the islanders, their fight against Nature's heavy odds, the disputes over leaving the homes their families have occupied for centuries, and their eventual capitulation. Into this is woven a simple love story.

The film was directed by Michael Powell, the unit consisting of :—

Camera—Ernest Palmer, "Skeets" Kelly, Karl Kayser, Jerry Bellhouse and John Behr.
Sound—L. Tregellas, Len Shilton and Bill Martin.
Production—Buddy Farr and George Black.

With us also were Bill Osborne (props.) and Tom Sullivan (electrician).

While the camp was being established on the island, we spent a week shooting in Lerwick on the mainland, midst the neverending syrens of the fishing fleet, and on board the "Golden Beam," a trawler, off Scalloway, on the other side of the mainland. Sound was parked in a hold, with fish all around and twenty tons of ice stacked in the background. Every now and then a miniature avalanche indicated the gradual melting of this ice. We all enjoyed our week on the trawler, which had a great cook.

Arrived on Foula, we settled in our camp near the Voe (the only landing place on the island for boats)—five huts, each to sleep four men and a mess hut for dining and recreation. When we arrived, there was practically no darkness and we found it difficult to sleep. However, soon, owing to the distances we walked to locations (Foula is only 3 miles by 2, but almost roadless, boggy, rough and hilly), we worked like Trojans, ate like horses and slept like logs.

The islanders, all crofters, depend mainly for a livelihood on the sale of their Shetland wool ; living is cheap, rents from five shillings to three pounds a year including fuel (peat) and water. Old age pensions help and some of the younger men spend the summer with the fishing fleet. Foula has a population of one hundred people, almost all of whom worked with us as carriers or in various scenes, thereby bringing to the little island such prosperity as it had never known.

There are two roads of a kind on the island, but these do not stretch very far, so that although we had a Morris Minor and traillers, most of our moves entailed hand-carrying of gear over irregular, peaty and marshy ground, up hills and along valleys. One day set up on the edge of a cliff, the next at the other end of the island, under a tarpaulin or in a tent. We parked our sound gear in barns, byres, under tarpaulins, in the cabin of a small yacht, in a tent and in the open air.

Owing to its topography, the weather of Foula can change rapidly, and it was often a case of cover up from sudden showers. It was a place where one had to use unorthodox techniques, as we were shooting under conditions never met with ordinarily. On most days the pounding of the sea on the cliffs could be heard all over the island, and a day free from strong winds was a novelty.

Towards the end of our stay, the wind was strong enough to blow us off our feet, and during the gales of our last two weeks sleeping in wooden huts was a terrifying experience, as we had no way of telling just what our huts would stand. A few years ago a house was actually picked up and blown out to sea. About two weeks before our departure, the gale season started, gale warnings being broadcast almost every night. For over a week we were out of touch with our depot ship, its radio being out of order. It was unable to reach or communicate with us. People at home became worried, the B.B.C. broadcast news that we were marooned and sent us greetings which we picked up on our radio in the mess hut, gales meanwhile raging outside and a few ominous cracks appearing in the roof of the hut. Fresh food became short, and the date of departure problematical.

These gales often rage for weeks at a stretch. We were naturally worried concerning the large amount of equipment we had, which we might have had to leave behind, even if we ourselves could have been taken off. However, "it's an ill wind" ! Being marooned, we became news, and rated headlines all over England and Scotland.

Our ship eventually arrived, and under great difficulties we managed to load our gear during a lull in the weather, arriving home little the worse for our adventure.

During these gales we had tinned foods for emergency use, as it is impossible to tell on Foula when supplies will arrive ; the island mail-boat crosses once a week to the mainland, if weather permits, but it has often been held up for weeks. Even our own boat, the "Vedra" (captain, Mr. Vernon Sewell), was often unable to cross. The seas and tides around Foula are always strong, and we could see the breakers over the treacherous Hoevdi rocks, where the "Oceanic" was wrecked. During our stay we covered every part of the island, and should know as much about it as the islanders themselves.

Some nights we showed our "rushes" (two weeks old), on a portable projector, and the islanders crowded in, many of them never having seen a movie.

There are no real bolts and bars on Foula. Everyone trusts everyone else, which shows how far from civilization it must be. It boasts a small shop which, in anticipation of the Southerners' visit, got a large stock of Woodbines, so we inaugurated a Woodbine week. As a matter of fact, we had two cigarette famines, owing to the hold-up of the boats, and were glad to smoke even musty pipe tobacco. We had keys to the shop and could help ourselves, putting our names on a piece of paper.

A Marconi radio transmitter which we had installed enabled us to keep in touch with London at all times.

It is impossible to finish without paying a tribute to the kindliness, help and understanding of the inhabitants of this little island of Foula, simple-living folk, but well-read and intelligent, interested in everything we did, and appreciative of our company and the financial help our visit gave them. They were sad when we left them, as we were sad also to leave them, our companions for eighteen weeks, but, I am sure we all feel, our friends for always.

1. A precarious camera set-up.

2. The unit's home for 18 weeks.

3. Member of sound crew and island helper resting en route to location.

4. "S.Y. VEDRA," the unit's depot ship.

5. "The Noop," Foula, typical of the rugged coastline.

SHOOTING IN THE SHETLANDS.

THE combining of the five Newsreels to defeat the "exclusive right" racket is having very serious repercussions in the stifling of healthy competition and the losing of their individuality. Cinemagoers cannot be fed entirely on "sop," they must have some red meat sometimes. If the "March of Time" can deal with controversial matters, as they do, without causing a riot in the cinemas, and at the same time obtain a continually increasing circulation, so can the Newsreels.

* * * *

The Coronation and Delhi Durbar should give great opportunities for intelligent newsreeling. Looking back to the Coronation Durbar ceremonies of King George V, 26 years ago, we wonder if the modern reels can beat the exploits of those days. Gaumont's developing and printing of the Investiture at Carnarvon on the train which was acting as pilot to the returning Royal train, and showing the pictures the same night at the Marble Arch Electric Theatre, London, wants some beating. The night-mare ride in the darkened milk waggons with the developer splash nearly drowning the lab-workers every time the train passed over the points, the battle against dust, the frantic endeavours to dry the negative and positive on the hand-turned drums, and the final wangle to project the rather tacky green print, rushed from Paddington Station at 10 o'clock the same evening, gave those who took a technical part a lifetime memory.

The Durbar also brought forth some technical achievements that even with modern methods will be hard to beat. The developing of the negative in the Indian heat, the washing and water difficulties, the long nights when having been taking all day the crews worked at developing and printing, were feats carried out by the old Barker Motion Photography, Gaumont's and Warwick Trading Company, newsreel aces of their day.

Thousands of feet of negative and hundreds of copies were edited and printed on the spot in India, all kinds of ramshackle buildings were utilised for dark rooms, and the prints thus produced were rushed all over India, Burma, China, Australia and New Zealand, thus saving weeks in the time of distribution. Afterwards the negatives were sent back to London—of course, there were no aeroplanes in these days. It was a case then of a Newsreel cameraman being also an expert in the laboratory.

Joe Skittrel, the Olympic Laboratory chief, was in charge for the Warwick Trading Company; and Harry Raymond, M.G. Print Manager, for Barker.

It's up to the modern Newsreels to show their mettle.

ALF TUNWELL, A.C.T. Member, explaining the Movietone Camera to King George VI. when Duke of York.

Lights in High Places

Key news at the time of going to press is the prosecution of Leslie Wyand, Hawkins, Golding and Prentice of G.B. News, for taking a lighting truck to Buckingham Palace on the night of the abdication. This resulted in a fine.

Yet Movietone, covering rota footage at St. James's Palace on the occasion of the Proclamation, had last minute official sanction for the same lighting truck and two 5-kws. to attend the ceremony at St. James's Palace. Some smart work was performed by Sir Duncan Watson's truck crew under the direction of Sam Mardon, Movietone's lighting expert, in the last minute assembly of the lights. The pageantry was much accentuated by the illumination and Newsreels obtained records which would have been impossible otherwise, owing to the lateness of the hour and to the December darkness.

Of course, there was no prosecution on this occasion.

The Crisis

During the crisis, Newsreel cameramen had a very trying and cold time covering the situation at Fort Belvedere, "pneumonia gate" Downing Street, Buckingham Palace, and Mrs. Simpson's house. They have to thank the police for the courtesy they displayed during this trying ordeal. It was necessary for the cameramen to be on their toes the whole of the time. Never a second could they slack. There was a nice gesture by the Gaumont executives, who gave a special allowance to their operators for refreshment to ward off the cold.

Hague Wedding

Pathé were the only Newsreel to send photographic units from England to cover the Royal wedding at the Hague. They obtained a scoop, beating the opposition on showing by many hours. Jock Gemmell had a worrying time in obtaining the necessary permits, which were very tied up, but with his confrères, Jimmy Taylor and Harold Jones, and the usual dogged persistency of these tough Newsreelers, a first-class picture was obtained.

Darts

The Movietone News boys are having a Darts Tournament in their Rest Room in Berners Street for ten-bob prizes. The leaders at the moment are "Slim" Wyand, "Bottler" Law, "Piggie" Harris, and "Fiddler" Tunwell. By the way, we'd like to know why the "Fiddler" has to have the dartboard tilted when he throws !

* * * *

The London Fire Brigade wishes to thank "Adolphe" for his gallant attempt to put the Crystal Palace fire out by being violently ill while flying over the conflagration photographing for G.B. News. Anyway, he got a really good picture. Firemen can take films with a Devry but it takes more than a belly-full of ginger beer to put out a fire.

"Tenax et Audax."

Letters After Their Names

Congratulations to Gordon Dines and John Boyle, A.C.T. members who have been elected Associates of the Royal Photographic Society.

We are also pleased to hear of the election to membership of Eric Williams, Stephen Dalby and Ronald Neame. Other members will, we hope, follow their lead.

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Lab Topics

Another Year

A year with a promising outlook for us all. I'm no prophet, but everything points to the Lab section growing in numbers and strength as each week passes. Why not 100% by the end of the year? We can be, if every member does his utmost to enrol non-members. Tell them what we've done, and what we intend to do. The toughest of them will be impressed.

Looking Back

It is just over a year since the Lab section was formed. During that period members have benefited as follows :—

Employment Bureau

EVERY MAN AND WOMAN WHO HAS LOST THEIR JOB AND REGISTERED WITH THE BUREAU HAS BEEN FOUND EMPLOYMENT. This service, which is without cost to them, they could not have received in any other way.

Educational

Lectures and Film Shows on the wide range of technical subjects have been available for laboratory employees. Members who have attended such will testify to the high standard of instruction and entertainment given.

The Technical Research Committee publishes a monthly abstract of information from film journals throughout the world of interest and value to members. In future, this abstract is to be incorporated in the *Journal*.

A library of the latest technical books dealing with the film industry is available at head office.

Social

Laboratory workers must get to know each other better. Meetings in town have drawn them together more, as well as the Film Shows and Lectures. A glance at the centre of the page will show that a further move is being made in this direction.

Working Conditions

Months of patient work has been put in by all members in drawing up a standard agreement to cover rates of pay and conditions of employment. This agreement has already been presented as a basis of negotiation to a number of laboratories, about which an article will be found elsewhere. As those laboratories which have minority membership at present, become stronger, the agreement will be presented to them also.

Jeopardizing The Production

Here is an incident which occurred recently, and I am quoting it because similar things happen all too frequently.

A production costing somewhere in the region of £30,000 was rushed through the cutting rooms and laboratories within a week. During this time the negative was cut three times and most of the sound track re-recorded twice. A preview and trade-show were also given. The result was that the cutting and laboratory staff were run off their feet, and physically incapable of turning out their best work. This habit of rushing a picture through its final stages is utterly wrong. Much time and thought is given to the initial stages of the production, and thousands of pounds are spent while the picture is on the floor, and then the whole value of the picture is jeopardized by trying to turn out in a week what should normally take at least three weeks! Crazy, isn't it?

The Modern Laboratory

It is a recognised fact that the firm with the most modern machinery, operated by skilled labour, will leave its competitors far behind. Several laboratory managers who have been putting the matter of new machinery on one side for some time now might take a hint. Precision work cannot be produced on worn-out printing and developing machines. On the other hand, it is stupid and suicidal to attempt to operate precision machinery with unskilled juvenile labour.

Dirt is the biggest bugbear on the processing side, and all the care possible to avoid it should be exercised. Any modern film laboratory should have an air conditioning plant also. Cleaning of the building should be carried out on lines similar to those in operation at Kodak's Harrow Works. Tiled walls, too, help to keep dirt under control.

Tailpiece

TO ALL OF YOU—Come to the Dance and bring along as many non-member lab workers as you can. It's bound to be a success, and the more that enjoy it the better.

Well, I'll be seeing you there. Cheerio!

GAMMA

GRAND

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(Organised by A.C.T. Laboratory Section)

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7.30 p.m. to midnight.

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ALL LABORATORY WORKERS INVITED

The Case for a Laboratory Standard Agreement

THE Laboratory Standard Agreement, the result of many months' hard work, has now been drawn up and has been submitted to most of the important laboratories in this country. The Laboratory Committee does not claim that it is a perfect piece of work, but it is brought forward as a definite basis for discussion between employers and employees.

Much labour has been spent on gathering information concerning all the important laboratories in the industry and working out a scheme for wages and conditions of employment which shall be fair to all concerned.

It cannot be too strongly emphasised that it is not the employees alone who will benefit by a standardisation of conditions in the laboratories but there are obvious advantages to be gained by employers as well.

Let us consider which way we are heading. Competition between laboratories is, at present, of the cut-throat variety. Prices for printing are so low that it is mainly by wage-cutting that many laboratories are able to show any profit at all. No American firm would dream of making such low charges for their work. No American renting concern would expect them.

This may, at first sight, seem to be solely the concern of the owners of the English laboratories, but it ceases to be so directly the workers' wages are attacked. These wages are already too low. In some cases married men with many years' service in the industry, are earning a basic wage of £3 per week for skilled work; boys and girls are being taken on to do men's work at less money.

It is obvious that a badly paid worker, or an inexperienced juvenile, cannot in the long run turn out work of the consistent quality of a well-paid contented employee. That principle has been recognised in every industry but ours. What inducements can we offer for ambitious youths anxious to make a start in their working life, when the chances of eventually earning as much as the local dustman are so remote?

So A.C.T. says to the employer: "Keep your low prices if you must; but the possibility of doing so without loss is made much more sure by increasing the efficiency of your machinery and your staff than by wage-cutting."

The poorest quality work is turned out by those laboratories paying the lowest wages. This, in itself, is significant. There is an ever-growing tendency for studio camera and sound recording departments to wish to know something about the laboratories who are going to handle their work. In many cases they are in for some nasty shocks. Surely the ace cameraman earning his £50 a week would not feel too comfortable if he knew that the precious negative on which he had lavished so much time and thought was now wholly at the mercy of a negative developer earning £3 a week, working with delicately balanced developing solutions made up with loving care by a fed-up-to-the-teeth 30/- a week youth.

This may be an extreme case, but there are laboratories where conditions are very little better—where overtime conditions are unsatisfactory, where illness is not paid for, where breaks between calls are totally inadequate, and where a tired, under-nourished, inefficient staff carries on turning out work just good enough to pass muster but bad enough to look and sound shabby in our cinemas. In more than one laboratory the proportion of juvenile labour to adult labour is absolutely indefensible and it would be, we believe, impossible to find a parallel in any other industry in this country. No wonder the Cinematograph Exhibitors' Association complains so often and so bitterly of the third quality prints its members are forced of necessity to show to the public.

So A.C.T. says to the employer: "Let us discuss this matter. It is to our mutual advantage. We want to make laboratory work a sound, well-controlled industry, where senseless exploitation of the worker is recognised as a stupid, inefficient way of trying to make a profit. When we present our standard agreement to you it is not just an impudent way of asking for a rise; it is an honest-to-goodness attempt to stop this drift towards letting a scientific industry sink lower and lower in the mud. It is doing, and will go on doing, British films especially, a lot of harm. A.C.T. wants to meet you and talk the matter over. We can both gain a lot by getting to know each other's points of view."

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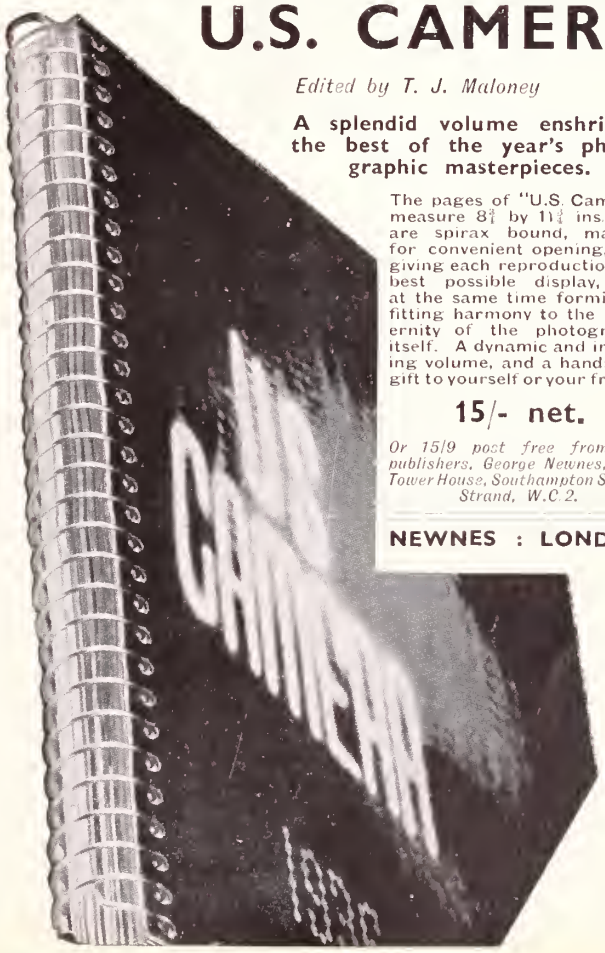

Recent Publications

Kanera-Neister

Portrait Photography, by Franz Feidler. George Newnes. 10/6 net. With an introduction by Dr. W. Warstat.

This book should interest many professionals. It certainly will prove of great value to all serious students of portrait photography, and at the same time it is not beyond the comprehension of amateurs and beginners. After giving some useful information on the choice of camera, etc., the author has happily appealed to the intelligence of his readers. He has not permitted himself to be led away into a sea of technicalities, the knowledge of which can only come to the student by trial and error, and which by reading in bulk only confuses. Herr Feidler has never lost sight of the real essentials to make a successful portrait, and these he ably and interestingly elucidates.

PAINTER-LIKE ARRANGEMENT.

The whole composition of the picture is worked out with forethought, strongly emphasising the pictorial aspect. The photograph has all the qualities which characterise a beautiful picture ; graceful beauty and distinction of pose are given pre-eminence. The final effect is that of a painting. At the moment when we pass to a pictorial description of personality, the representation becomes subjective. The producer endeavours to reproduce the impression he obtains from nature subjectively, in pictorial form, in accordance with his own impressions. Pictorial representation is, therefore, something quite different from the purely external snapshot pictures of objective representation.

The two figures are intimately interwoven by several crossi and connections of the lines. The eye follows the figure-ei composition and always returns to the heads. The group was spontaneous. It was merely quickly seen and seized w the expressions remained lifelike. 9 by 12 mirror reflex cam with 20 cm. Imagon.

Dr. Warstat in his introduction remarks of the author :— "He has often proved that he knows how to explain his views and his practical experience by means of his pen. He is a master of diction as well as a master of the camera." There is much truth in this statement, as students will discover for themselves when reading what Herr Feidler has to say on that often very involved subject (to the beginner), the correct use of lenses and the laws of optics, in order to obtain the effect for which one has set out. Or again, perhaps not so involved for some, the psychology of the subject to the photographed : personality, use of hands as a key to character, or the help one can obtain from the knowledge of physiognomy, and many such subjects. All these are discussed with a simplicity of thought and exposition which makes most interesting reading.

Reproductions of studies made by the author illustrate all the points which he raises and discusses. There are over 250 of these, two of which are reproduced here. Personally, I found them very interesting, they have such a wide range of subject, treatment and thought behind them. Diagrams and illustrations are also used to show the right and wrong way to light a subject in order to get certain desired effects.

The concluding chapters deal with photography in relation to art. In these, many wise things are said, and much of the nonsense talked on this subject is given its true value. The author has very definite views, they are worth reading and considering. I will content myself with a couple of quotations. Herr Feidler says: The means of art are of a mental order, whilst those of photography are pre-eminently technical." And again later: " . . . . It likewise denies that it may be judged as an art, and demands for itself a self-made law of existence."

G. FORT-BUCKLE.

Brunel's Home Front

Only Yesterday (A Play, in Three Acts), by Adrian Brunel, Newnes, 2/6.

This play is adapted from a film, "Blighty," made in 1926, by the author and Mr. Ivor Montagu—a novel reversal of the usual practice of films being adapted from stage plays.

The plot centres around the activities of an upper class family during the Great War. The author says: "When I look over my collection of newspapers of the war period I am ashamed of the picture they give of our people during that time, and in evidence I offer what I believe to be a true portrait of some average people who were not so completely decivilised. It is my documentary of the home front."

There are some interesting period references in the dialogue, such as the following, in a discussion as to what play the family should go and see: "I would suggest 'My Lady's Dress'—Dennis Eadie is excellent, Gladys Cooper acts for the first time, and there's a girl, Lynn Fontanne, who's great."

The play is admirably suited for the amateur stage, all the action taking place on one set, and consequently being very cheap to produce. There are eight characters.

An interesting experiment would be to give this play to someone unacquainted with the original silent film and have them do a film script from it.

Films No Charity.

Twenty-five Years of Films," by G. R. Doyle. The Mitre Press. 10/6 net.

ALTHOUGH not in any sense a work for the student, Mr. Doyle's book makes very pleasant reading for those who already have a fairly good knowledge of the growth of the film industry and the outstanding films of the day before yesterday. Unfortunately much of it is obvious padding, some of the chapters being mainly rewrites of articles written many years ago, and nothing is quite so stale as last week's news. It is, however, a great pleasure to approach a book which states early on, as this one does, that "producing firms do not lay out millions of dollars as a charitable pastime. . . . . A secure future can only be obtained by consulting popular taste and the mass level is not necessarily representative of high artistry and culture."

The reviewer applauds these sentiments, though he is not so enthusiastic over Mr. Doyle's attitude in general

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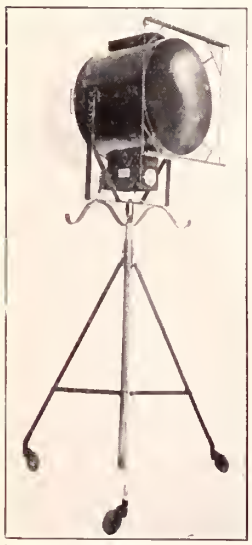

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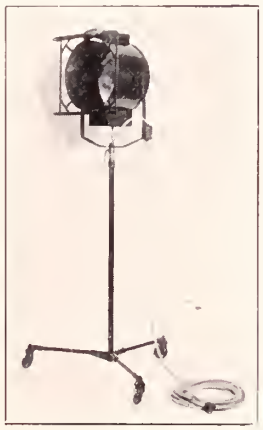

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towards our industry. He is a stage producer who obviously, though he denies it, dislikes films, but is not averse to making capital out of it. Studios he characterises as "that degrading atmosphere of contemptible mediocrity," while later he refers to "studio 'artists' redolent of the scum of the Bowery." Still, if you care to overlook these discourtesies you will find much in these pleasantly chatty reminiscenses to justify Korda's introductory remark, "that the first duty of a book is to entertain."

J. N. B.

The British Journal Photographic Almanac, 1937, 2/- net

Our old friend, the "B.J. Almanac" for 1937, is as good value for money as ever, and as the "British Journal of Photography" has been publishing this Annual since 1866, it can speak with real authority on technical matters.

The Editor himself, Mr. Arthur J. Dalladay, contributes a very interesting article, "Solving the Abnormal Exposure Problem," a subject, the careful study of which, would well repay the would-be cameraman or still-man.

In concluding his article, Mr. Dalladay says: "But to those who would say that all this fuss about theoretically accurate determination of exposures which do not happen in practice, and which an experienced photographer could cope with anyhow, does not get us anywhere, I would answer that photography is full of approximations that are 'near enough,' and the more we reduce to exact measurement, the more we realise the inner meaning of quite a lot of things that we had taken for granted or never even thought about. . . ."

With these sentiments I heartily agree. Modern emulsions give us such a tremendous exposure latitude that cameramen are getting careless in these matters and losing sight of the fact that the perfect negative is attained by perfect exposure. And with the coming of colour, where the highest degree of exposure accuracy is imperative, the exposure meter will be in constant use; so to those of you who would reach the front rank in photography in the future I would say—study the problems of exposure and in particular the measurement of actinic light..

Turning over the pages we come to—"The Hyperfocal Distance and How To Use It," by Rev. B. Wright, M.A.

Here, too, is very good reading for the technician; with lens apertures increasing and the depth of focus decreasing in consequence, added to which the cinema camera is more frequently on the move around and about the "set" these days, the problems of sharp focus are growing.

Every technician, whether he be "lighting expert" or "clapper boy," should know the fundamentals of optics and be able to tell, without reference to handbooks, the depth of focus a lens will give at varying apertures.

A technician who takes the trouble to absorb the data given in this article will greatly increase his knowledge of the focal problem.

To those of you who were not present last year at the highly informative talk on "Polar Screens," given by Mr. I. D. Wratten, of Kodak, Ltd., in the series of A.C.T. lectures, I would advise careful reading of "Polarised Light in Photography," by Bernard Alfieri, Jun., a regular contributor to the pages of the "B.J."

He takes us as far back as 1669, when Erasmus Bartholinus observed the double-refraction of Iceland spar, a crystal that split up a beam of light into two separate portions.

On the next pages we find "Over-Run Lamps for Photographic Purposes," by Harold Bright, M.A., M.R.I., and Stanley W. Bowler, A.R.P.S. They say:—"The increasing use of lamps that are burnt at a voltage greater than the normal rating in order to increase the light efficiency for photographic purposes, prompted the following investigation."

This is well worth the reading to both still-men and cine-camera technicians; in most studios now these lamps are in use, particularly for the "modelling" of "close-ups."

For the first time in this Almanac there appears a special section on "Cinematography" and a great deal of information has been collated from the technical and research departments dealing with emulsions and their processing.

I wonder how many camera technicians know the gamma to which their laboratory works, or the time difference between stagnant development and that with agitation? I have frequently seen a camera assistant making a hand-test in a thermos flask; he inserts the exposed strip in the developer, sets the alarm clock for the given time, then sits down for a smoke or a read until the bell rings.

In one graph in this section he will see that to attain a given gamma of 0·7, agitated development requires 3·7 minutes. With stagnant development, however, the same stock will need 7·0 minutes to reach the same gamma!

Nearly double development time!!

This is just an instance of the many interesting facts contained in a volume which is a veritable mine of information.

I have only touched on but a few of the subjects covered; on second thoughts, which after all are usually best, I would say that the "B.J. Almanac" for 1937 is better than ever.

Lovat Cave-Chinn.

Appreciation from Hollywood

Herbert Aller of the "International Photographer" writes promising an article for our next issue, and says he has just received the New Year issue of our *Journal*.

> "It is really a good piece of work. We in Hollywood hold it in high regard. There is much to learn from it and I assure you that more than a few minutes will be spent by many of us in examining this magazine carefully—might I say that it will be more than a mere nibble."

Labour Saving

We had occasion to telephone the Board of Trade the other day. On getting through to the general switchboard and enquiring for the Films Department we were referred to another number. On the telephone directory lying open on our desk there was printed alongside that number—Bankruptcy Department. Sense of humour or merely labour saving?

Panning Around the Globe

Dear Readers! I return!

In response to numerous requests, I make a gesture (and not a rude one, as would be expected) . . . . I take up my pen once more, having been informed by the Editorial Committee that "the pen is mightier than the sword" (but not the Axe under which we all have suffered).

So to the man, or men, with the "Blue Pencil" I dedicate the following :—

Knock, Knock,
Who's there?
Gesture!
Gesture who?
Jester Pog.

* * * *

World Cruise.

During my voyage around the world—that is to say, from Old Compton Street to the Round House—I collected many charming native and traditional poems. The first is a variation of the "Frog" which I have already published :—

"The Frog a funny kind of Bird are
When he sit he lie almost
When he hop he fly almost
And he sit on what he hasn't got
Nearly, almost, either."

(Thanks due to Pat).

and now the Masterpiece :

"Won't you stop a little moment?" said the producer to the maid—
"Oh, sir,"—she coyly said—"I can't—of men I am afraid."
"Oh come into my office—it's up a winding stair—
And you shall have a Film Contract if you come up there."

"How can that be," the maiden said—"I cannot even act."
"All you want, my dear," he said, "'s a pretty face and tact."
"Just try some new hair-raising stunts, get kidnapped if you can,
Then I will introduce you to the Publi-city man."

She went into the office, it wasn't very far,
And in three weeks that girl became one more new British Star.
She kept her personality and her reputation good,
But, sad to say, she lost them on the way to Hollywood.

The American producer said, "Of you I'm very fond—
But I'd like you even better if you'd become a Blonde."
She plucked her eyebrows, dyed her hair, became so standardised,
That when they saw her pictures here she wasn't recognised.

Before she went her name was big and top of every bill,
And that is how America sets out our stars to kill.
They slimmed her down and masked her face, she looked like every other;
She wasn't known by anyone, not even by her mother.

A wise guy she became, and one might call her bold—
Just what they call in Hollywood a digger after gold;
Appeared in a great Masterpiece—she hadn't very much on—
But one could see there was a blot upon that girl's escutcheon."

(Where's that Blue Pencil?)

POG AT WORK.

A.C.T.'s Social Life.

The dance seemed to be a great success, everybody being capable of polishing off something (which maybe they regretted later). They were all there (and when I say "there" I mean there for a purpose). Yes! And a lot of water flowed that night.

On this night a friend of mine (Oh yes, I have friends) complained I hadn't greeted him . . . so here goes . . . . "How are the folks?"

* * * *

World News.

HOLLYWOOD,	Still making Pictures in spite of itself and English Quota competition.
GERMANY,	Just about making.
ITALY,	Far too busy to make films.
FRANCE,	Industry cleaned up to give Frenchmen a job in their own studios (what a chance for a crack, but I'll let it slide).
ENGLAND,	Overdrafts very busy changing hands.

Whilst on the subject of foreign affairs, I have been asked to state with full authority that "Pan American" is not a cameraman looking for a job. (It would appear that this is the French expression for an American Tripod Head). "Ali Bi"—new Arabian film technician, he shouldn't live long as he's nearly worn out.

* * * *

Colourful Moments with Pog.

What with all these new types of colour systems—additive, subtractive, multative and dividative, all very competitive, I am sure. However, in spite of all the new Sciences, I still think, in my own talkative way, that the Argumentative system (yet to be tried by the EXECUTIVES) to obtain illustrative colours . . . . Take away the numerative you first thought of and the answer is derivative from the negative . . . hence the positive, and the higher the fewer . . . Who's been at my Eno's?

Clappers

To the newcomer, clappers might appear to be a most involved waste of time. Rest assured, dear reader, this is not so. These indications on the film are for the guidance of this species of small animal life known as "cutters" or cuttum vulgaris.

The method of working them is as follows :—Stand in front of the subject being filmed, showing, for example, the board marked Scene I, Take 1. When the cameraman calls "Clappers" you proceed to shout out any old scene numbers you like. That is, any numbers which do not correspond with those on the board. This tends to confuse the person who has to synchronise the films—which doesn't matter a cuss. You then tear the sound track into several small pieces, stir well, and proceed to write out a dope sheet which corresponds with a subject taken about three years ago. And that, my boy, is the reason why it is necessary to pay cutters such a ponderous salary.

* * * *

Closing Notes. (*Thank heavens !—Ed.*)

We all make mistakes at one time or another, so I admit to the following :

(1) That I was born.
(2) That I entered the Film Industry.
(3) That I am still in it.
(4) That I started writing this page.

So What ?

* * * *

Stop Press News. (! !—Ed.)

"Not To-day Josephine Productions" has raised her head from the dead. . . . . "Oh ! Death where is thy sting ?"

Hence my Winding-up Note :

WARNING.

The Bucket Shop Season is now in full swing, so put on your ear-muffs and hibernate until all the sharks have been cleared by the A.C.T. solicitors. What a clean-up that will be (thanks to Jeyes).

So don't sign Contracts printed on that kind of paper.

Well, Suckers, I can't go on, so I'll quit while the party is still clean (is it ?).

Will you hear from me ? Ask old Blue Pencil.

Pog.

British Press Photographers Association

ANNUAL DINNER AND DANCE

The annual Press and News-Reel Photographers Dinner and Dance is to be held at the Criterion Restaurant on Monday, February 15th, 7 p.m.—2 a.m.

The British Press Photographers Association celebrates its formation with this year's function, and every effort is being made to make the evening a memorable one. The Press boys hope to see all their film friends with them on this occasion—one night in the year when cameras are laid aside in favour of general "Whoopee".

Plans are being made for a "non-stop" evening, of food, fun, dancing and cabaret. Tickets at 12/6 each can be obtained through the various News-Reel committee members or from the British Press Photographers Association, 17 Fleet Street, E.C.4.

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Technical Abstracts

Applications of Photography

Details of recent patents taken from *Photographic Abstracts*, Vol. XVI., Part 4, No. 64, published by The Royal Photographic Society of Great Britain.

Motion Picture Cameras. P. D. Brewster.

Cameras for two or three separate films, one directly in front of a lens and the others displaced to left and right of it, have two intermeshing multiple-bladed rotary mirrors and a rotary shutter enabling the exposures to be effected simultaneously and uniformly over the entire surface of each film.

Kinematographic Cameras. Lampen-und Metallwarenfabr. R.Ditmar Geb.Brunner A.-G.

In a camera having an indicator showing the lens diaphragm adjustment, visible in or near the field of the view-finder, adjusting means for the diaphragm, connected thereto by at least one transmitting element, is arranged at a distance therefrom, and within reach of the fingers of the hand holding the camera.

Production of Coloured Picture Films. Harmonicolor Films, Ltd. (J. Guardiola).

The two sides of a photographic positive are differently dyed, one side with an acidified mixture of Malachite green, Brilliant green, and Rhodamine B, and the other side with a mixture of Rhodamine B and Auramine made alkaline, the two sides being mordanted in a solution of chromic acid and potassium ferricyanide acidified with sulphuric acid, and afterwards treated in a bath of sodium bisulphate.

Multiple Printing Machine. A. L. V. C. Debrie.

In a multiple printing machine for motion-picture work, a plurality of supply and take-up reels are mounted one above the other on a plurality of vertically arranged shafts. Power drives are connected to the shafts, and the printing operation takes place when films are drawn past a hollow cylinder having a light source inside the cylinder and having slots through which the light passes. Sprocket teeth are provided on a series of axially arranged drums for moving the various films.

Method and Means for the Reproduction of Films. Projector A-G.

(*a*) Photographic contact-printing apparatus especially for films of low light-sensitivity, has a feed track with a guide surface curved transversely of the film and wholly or partly concave towards the copying light. (*b*) The perforation gauge of the underlying film is made slightly longer than that of the overlying film in its untensioned state, and the films are so fed together through a comparatively long copying zone that the portion of the overlying film, which at a given moment is within the copying zone, is given a greater tension than the corresponding portion of the underlying film.

Adjustment for Kinematograph Printer. M. A. Dalotel.

The rheostat is formed of elements whose resistances have values which form a series of numbers so that by addition the series of natural numbers is formed up to the factor of exposure desired (32 lights with five elements); each of the sections can be short-circuited by a lever actuated by a perforation in a pilot band fed in synchronism with the film to be printed.

Kinematography in Colour on Film Having a Trichromatic Mosaic. G. A. Raguin and Ste. Lumiere.

Printing is done by projection from an original made on a film having a trichromatic mosaic, the original image being twice the size of the copies. While each image is being printed, three-colour filters are introduced into the light beam, each for a suitable time, so as to eliminate the radiation transmitted by two elementary filters of the mosaic.

Noiseless Sound Reproducing System. J. H. Hammond, Junior.

For noiseless sound reproduction, the sound track is printed in two colours, one colour for the sound portions of the track which will actuate the reproducer, and another colour which will not actuate the reproducer, for the silent portions of the track.

Printing Trichromatic Mosaic Images. Ste. Lumiere.

In order to avoid loss of saturation of the colours due to overlapping of the spectral regions of the three elementary filters, the printing light is filtered by three practically monochromatic filters; the relative exposures can be adjusted according to the composition of the light, the transmissions of the elementary filters, and the chromatic sensitivity of the emulsion.

Photographic Light-Sensitive Material for the Production of Coloured Photographs. B. Gaspar.

A bipack comprises one film having two superposed light-sensitive layers of different colour-sensitivity containing colour-forming compounds which produce different colours in the two layers, and another film having either one light-sensitive layer or two superimposed layers, the colour-sensitivity of which differs from that of the first film. The possible constituents of the layers are specified.

Report on Studio Lighting

S.M.P.E. Studio Lighting Committee classifies motion picture lighting broadly into two types, general and modelling.

General illumination is flat lighting of fairly uniform value. For black and white photography it ranges from 200 to 400 foot-candles, and provides light to make the set photographically "visible" and to illuminate the shadows. Lighting units used to provide this light are twin-broadsides, the rifle, the scoop, and multiple-lamp overheads, and small lamps placed behind posts, trees, etc. 200-300 and 500 watt short tubular projection type lamps are used in table and floor stands and wall brackets.

On large sets, general lighting not being able to provide sufficient intensities at great distances, modelling units are used at their widest beam.

Scenes requiring effects called for by story use no general lighting, photography being done with modelling units.

TABLE I.

Modelling Units.

36-inch Reflector Spot, ...	150 amp. ARC.
	10 kw. Mazda.
24-inch ,, ,, ...	150 amp. ARC.
	5 kw. Mazda.
18-inch ,, ,, ...	2 kw. Mazda.
	80 amp. ARC.
	120 amp. ARC.
	150 amp. ARC.
Lens Spots, ...	10 kw. lamp.
	5 kw. lamp.
	2 kw. lamp.
Baby Spots	1000 watt.
	500 watt.
"Lupe" Lights, ...	1000 watt.

Modelling lighting serves to create highlights and contrasts and give higher key to "star" and limited groups of actors. This illumination is two to four times as high as general lighting, and in special cases as high as eight times as great as soft as general lighting.

Model or hard lighting beams 12 to 20 degrees.

Illusion of depth obtained by "back-lighting."

General rule is to mount lamps on parallels.

TABLE II.

Lighting Equipment for Motion Picture Photography
(Black-and-White).

			Small Room, 20 × 20 ft.		Medium Size, 50 × 50 ft.		Large Size, Larger than 50 ft.	
Type of Set.	Close-Up Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
General Lighting								
Broadsides	2	2	4	8	10	20	20	40
Overhead (Scoops)			2	3	5	10	12	30
Overhead Strips or Domes	1	1	2	3	2	4	8	12
Modelling Lighting								
24 or 36 inch Reflector.			1	2	2	8	4	16
18-in. Reflector	1	2	4	6	6	12	10	20
Lens Spots (Large)		1		1	2	8	4	16
Lens Spots (Medium)	1	2	2	6	4	8	12	24
Lens Spots (Small)	1	1	2	4	2	4	2	8

For "Technicolor" process, general illumination is 750 foot-candles, high-light level 1,000 to 1,200 foot-candles.

White flame arcs used for general lighting, modelling is given by high-intensity arcs using amber filters to level blue-violet radiation, incandescent lamps use blue filters.

Frisnel lens spot is new 2,000 watt lamp (also available in 5,000 watt high-intensity arc)—much used for colour work.

Special incandescent lamps for Technicolor photography designated C.P.

Front lighting problem overcome by mounting high-power lamps on bridge through which camera can shoot.

(From S.M.P.E. Journal, *January*, 1937).

New Anti-Flutter Device

Equipment for the accurate measurement of film flutter, the distortion caused by variations of film speed and density, is announced by Western Electric. This is regarded as a further step in the improvement of sound motion picture quality. The new equipment was recently demonstrated in New York by V. Subrizi, of the special sound motion picture research staff of the Bell Telephone Laboratories, and is particularly interesting to the service organisation.

The new apparatus is a further development of the "flutter bridge" which Western Electric announced last year. It makes use of the "filter" principle to separate the sound frequencies, and permanent records of the measured data are recorded on a moving paper tape.

Mr. Subrizi's talk was accompanied by a series of slides illustrating the more technical aspect of his subject and closed with a practical demonstration of various flutter recordings made for the purpose of instructing service men in the art of detecting and indentifying various types and degrees of flutter as experienced in the theatre.

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